

Allied Health Telehealth Capacity Building: Scoping Project

COMPLETION REPORT

January 2015

The Allied Health Telehealth Capacity Building Scoping Project is a joint initiative of the:
Allied Health Professions' Office of Queensland (AHPOQ), Health Service and Clinical
Innovation Division, Department of Health and
Cunningham Centre, Darling Downs Hospital and Health Service (DDHHS).

Document control

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Allied Health Telehealth Capacity Building Scoping Project Completion Report

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Summary

Background and purpose

Increased use of telehealth is one of the priorities identified in the Department of Health's *Better Health for the Bush* (2014) to support rural and remote consumers' access to allied health services. This will require redesign of allied health services and statewide telehealth capacity building for this workforce. The Allied Health Professions' Office of Queensland (AHPOQ) and the Cunningham Centre, Darling Downs Hospital and Health Service (HHS) anticipate increasing demand for resources and training to support clinical and service redesign activities.

Aims

The aims of the scoping phase were to:

- identify the workforce capacity, service redesign, and infrastructure/access resources, tools and training programs already available and those required to support telehealth implementation in allied health services, and
- focus subsequent 2014-15 capacity building work on clinical areas and professions presenting high demand for telehealth implementation support and resources, including areas with current telehealth trials and resources in development or completed.

Project governance and management

The project was jointly sponsored by the Chief Allied Health Officer, AHPOQ and the Executive Director of Allied Health, Darling Downs HHS. The term of the project was 12 weeks. The project was conducted within existing resources by AHPOQ and the Cunningham Centre. A Steering Group supported project governance and included the project sponsors, project team members, and representatives from CARU (Telehealth Support Unit), HHSs and the Statewide Rural and Remote Clinical Network.

Project activities

The scoping project sourced information and resources in relation to allied health telehealth services and training programs. Data collection processes included a desktop review (published literature and training program information), key informant interviews with individuals involved in developing or implementing allied health telehealth services in Queensland and interstate, and an online survey of Queensland HHS allied health staff and other stakeholders. Data was collated and analysed to develop major themes and summary tables of telehealth models, clinical applications of telehealth, and training programs.

Deliverables

Deliverables of this project primarily comprise collated information on service, workforce (including training) and technology/equipment barriers, enablers, resources and learnings in relation to allied health telehealth services. They are presented in Appendix A to F.

Scope

The project focussed on allied health clinical service delivery using synchronous telehealth technology (real-time videoconference). Information on other forms and uses of telehealth was collected incidentally. Information was collected on telehealth implementation in all settings, but use in rural and remote areas was a particular focus of the project.

Summary findings and recommendations

1. The primary benefits of telehealth services identified by stakeholders relate to service access for consumers, particularly:
 - improved timeliness and frequency of services, and
 - reduced travel for clients and/or clinicians to access/provide services.
2. Two major models of allied health telehealth services were described in the project.
 - i) Dual clinician model: clinical staff contribute to service delivery at both the hub site and recipient site i.e. site at which the client is present. This model can be further categorised by the healthcare worker supporting the service at the recipient site as follows:
 - AHP [VC hub site] ⇔ AHP (same profession) and client [VC recipient site]
 - AHP [VC hub site] ⇔ health professional (e.g. other AHP, nurse) and client [VC recipient site]
 - AHP [VC hub site] ⇔ allied health assistant and client [VC recipient site]
 - ii) Direct client care model: clinical staff are present at the hub site only.

The choice of telehealth service model was influenced by the purpose of the service, clinical task complexity and physical requirements (i.e. the degree of ‘hands-on’ activity required to deliver the service), clinical governance or regulatory considerations (e.g. requirements for supervised practice during training), and casemix characteristics including common clinical presentations. Health literacy and communication/language considerations, staffing and other operational matters in the hub and recipient sites, and the confidence and experience of the practitioner/s with telehealth also influenced the choice of model.

3. Allied health telehealth services are often developed by a motivated practitioner or small team to address needs of a specific client or small group of clients, and then “evolve” as confidence and competence in use of telehealth increases. Consequently, formal service development planning including evaluation is generally limited. This has restricted the volume of evaluation data available on Queensland Health allied health telehealth services.
4. The extent to which clinical tasks and programs require adaptation for telehealth varies by profession and clinical area. Four principle methods of adaptation were identified to address clinical limitations of telehealth:
 - Technological solutions including use of peripheral devices (e.g. medical camera systems, lapel microphones), bandwidth / image chain augmentation, or store and forward systems
 - Workforce and collaborative practice solutions such as development of recipient site staff capacity to deliver “hands on” clinical tasks,
 - Care planning solutions including patient selection and integrating telehealth into clinical pathways
 - Task adaptation solutions such as omitting or changing some components of assessment or intervention tasks to improve compatibility with telehealth.

Clinical reasoning, and sometimes complex risk assessment requiring understanding of the limitations and capabilities of telehealth devices, is necessary to determine the adaptation strategies appropriate for each clinical task or program. This is a challenge for clinicians with limited access to examples or guidance with respect to telehealth implementation in their profession and practice area. Service and clinical redesign tools could assist, as well as improved networks and dissemination strategies for information on successful models.

5. Engagement, shared understanding and expectations of responsibilities, and strong partnerships between hub and recipient site staff / services are critical factors for telehealth development, implementation and sustainability. Hub-recipient site partnerships were identified by project informants as the most significant challenge and potential impediment for the development of allied health telehealth services.
6. Efficiency and cost effectiveness of telehealth services needs to be carefully considered by allied health teams, with purchase and recurrent equipment costs (in some situations), and staff time investment in administrative coordination and planning for telehealth services conferring costs to teams. Costs may be offset by travel savings and increased activity, or managed through workload allocation or partnerships with other business units.
7. Demand is expressed by allied health professionals for training and supporting resources to facilitate the expansion of telehealth services in Queensland HHSs including:
 - resources and support for service redesign and evaluation,
 - clinical redesign resources and training for AHPs,
 - competency-based clinical skills training for recipient site staff (e.g. other AHPs, nurses and AHAs) focussing on skills required to support telehealth services,
 - technology advice and recommendations for specific clinical purposes.

Recommendation 1: Project closure

The sponsors approve this project report and accept the project deliverables as consistent with the project plan.

Recommendation 2: Resources and training

Comprehensive resource packages and associated training products are generated to assist allied health teams to develop, implement and evaluate telehealth services. The scoping project has identified demand for resource packages for:

- a) Service redesign to support change management and planning for telehealth implementation. Resources and training should assist teams to scope the potential for telehealth implementation and manage the service change in hub and recipient sites. They may draw on related resources designed to support model of care changes for delegation or expanded scope (skill sharing), and integrate existing ‘generic’ telehealth resources produced by CARU or other agencies. Although highlighted as a need by the allied health workforce, the resource package may also be relevant for other professional groups.
- b) Clinical redesign for a range of specific clinical functions. Resource packages would comprise examples and detailed information on delivering the relevant clinical functions via telehealth, including telehealth model/s, task adaptation requirements / options, risk mitigation and strategies to optimise clinical effectiveness (e.g. recipient site staff skill requirements, technological strategies, task adaptations). Telehealth equipment matters including set-up and non-standard equipment options would also be relevant where they relate directly to the clinical function. Training products would support clinical skill development at telehealth hub and recipient sites, including competency-based training for AHAs and other health professionals where relevant to the service model.

Each resource package would focus on a clinical function identified by HHSs as a priority for telehealth delivery. Priorities may be informed by outputs from this scoping project and through a consultation process with allied health leaders. Priority should be given to clinical

functions which require adaptation from traditional face-to-face delivery, are difficult for rural and remote sites to access due to resident staffing availability or generalist practitioner skill sets, and those with potential to positively impact safety, quality, and clinical outcomes for rural and remote services. Scoping project findings indicate that priority areas are:

- client function in the home including assessment of the home environment, equipment and therapy / retraining programs,
- mobility and transfers assessment and therapy programs, including non-complex equipment prescription and review, and falls prevention,
- multi-professional diabetes management including diet and nutrition, and foot care,
- paediatric rehabilitation,
- dysphagia assessment and management (non-complex presentations), and
- hand therapy and / or burns management (similarities in the telehealth service model, component tasks, and target groups for training indicates potential value combining these two clinical areas in a single resource package).

Recommendation 3: Networking and collaboration

A collaborative network is developed to encourage engagement and sharing between allied health teams implementing or scoping telehealth services. The existing Allied Health Rural Generalist Training Positions (AHRGTP) collaborative telehealth network may be expanded for this purpose. The AHRGTP group currently includes membership from AHPOQ, the Cunningham Centre and CARU, along with a number of rural or remote services implementing telehealth. This group may be expanded with limited additional resource input from project partners.

Recommendation 4: Evaluation of allied health telehealth services

Increase the evaluation of allied health telehealth services in Queensland HHSs and improve dissemination of outcomes / findings to inform service development and planning initiatives. Potential strategies include continued and expanded opportunities for research funding for telehealth evaluation projects, collaboration between allied health services implementing telehealth and between services and researchers in HHSs or telehealth research centres, incentivising collaborative and multi-site telehealth service trials, and providing access to resources such as evaluation plans, surveys and data collection tools (see Recommendation 2).

Recommendation 5: Telehealth capacity building plan

The AHPOQ, Cunningham Centre and CARU, in consultation with HHS allied health professionals, telehealth coordinators and other stakeholders, use recommendations and findings from this scoping project to develop and implement an allied health telehealth capacity building plan. The plan should define the agreed outputs and deliverables which aim to support expansion of allied health telehealth services in Queensland Health, and include activities to be undertaken, responsibilities and mechanisms for coordination and collaboration between stakeholders.

1. Project overview

1.1 Allied Health Telehealth Capacity Building

1.1.1 Background

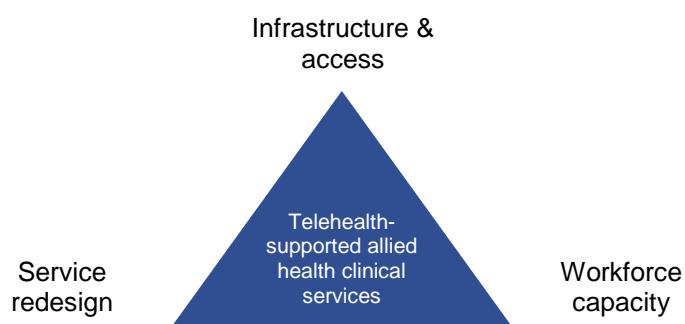
Increased use of telehealth is one of the priorities identified in the Department of Health's *Better Health for the Bush* (2014) to support rural and remote consumers' access to allied health services. This will require new and renewed strategies to build capacity for allied health services to deliver clinical care via telehealth.

1.1.2 Goals

- Increase the use of telehealth for allied health clinical service delivery for rural and remote consumers, including increased telehealth consultations and increasing range of services provided by telehealth.
- Ensure high quality, effective and safe use of telehealth to deliver allied health services.

1.1.3 Preliminary model: telehealth capacity building strategy

To guide the investigation of strategies to increase use of telehealth for allied health services, a preliminary conceptual model of capacity building was formed through consultation with key stakeholders. Stakeholders included Allied Health Rural Generalist Training Position sites implementing telehealth service development trials, and Clinical Access and Redesign Unit (CARU) Telehealth unit. Consultation indicated that telehealth capacity building will require action in three broad areas. The model used to guide information collection on current use, drivers, barriers, enablers and opportunities for expanded use of telehealth is shown below.



Workforce capacity includes development of operational telehealth skills (e.g. using equipment, generic telehealth communication skills) and clinical skills specific to the scope of practice of the profession and service requirements of the practitioner (e.g. assessing appropriateness and adapting specific clinical tasks and assessment/treatment plan for telehealth delivery including identifying and managing risks).

Service redesign relates to changing the service model to deliver new or current face-to-face services via telehealth (e.g. tools and processes for establishing telehealth clinics, capturing data, evaluation and quality monitoring, patient resources, examples of allied health service redesign projects).

Infrastructure & access includes supporting AHPs access to telehealth technology (e.g. technology specifications and application to allied health clinical activities, procurement, funding models and business planning including telehealth).

1.2 Scoping Project

1.2.1 Purpose and rationale

To address Queensland Health's priority for increased access to care, delivered closer to home, strategies are required to support implementation of telehealth by allied health professionals. Although barriers and enablers will need to be addressed at local health service level, those common statewide may be most expediently addressed through collaborative action of the Allied Health Professions' Office of Queensland (allied health workforce policy and planning), Cunningham Centre (allied health education provider), CARU (telehealth support) and HHSs. There is limited information available at a statewide level of the strategies required to support implementation. Consequently a scoping project was undertaken to examine existing telehealth services, along with barriers, enablers, and learnings from health services in relation to telehealth implementation.

1.2.2 Aims

The aims of the scoping phase were to:

- identify the workforce capacity, service redesign and infrastructure and access resources, tools and training programs already available and those required to support telehealth implementation in allied health services, and
- focus subsequent 2014-15 capacity building work on clinical areas and professions presenting high need in terms of telehealth implementation activity, existing trials and available resources, in order to minimise duplication of development work by clinical teams.

1.2.3 Objectives

The large volume of work that has been undertaken in the past on general barriers and enablers for telehealth was acknowledged by the project team and not replicated. The scoping phase targeted allied health-specific telehealth implementation examples, barriers, enablers, resources and opportunities. The focus of the scoping phase was to identify 'what we have', 'what can be shared' and 'what we need'. Objectives of the scoping project were to:

1. Identify needs/barriers and enablers for implementation of allied health telehealth services
2. Map needs to existing internal (Qld Health) and external resources/tools and training
3. Generate summary findings to support development of an allied health telehealth capacity building plan for consultation with stakeholders

1.2.4 Scope

The project developed from the allied health rural generalist work area of both the AHPOQ and the Cunningham Centre and therefore retained the focus of telehealth use in rural and remote areas, although metropolitan models were also included. The scope was also defined by the business of the sponsoring units, and therefore focussed primarily on workforce development and service redesign elements of telehealth capacity building. Information on infrastructure and equipment was sourced in relation to implementation barriers and enablers, but detailed

mapping of technical aspects of telehealth use was not undertaken. Real-time videoconference (synchronous telehealth) was the focus of the project, with store and forward (and similar asynchronous telehealth), telemonitoring and other forms of telehealth examined incidentally as adjuncts to videoconference models.

1.2.5 Method and activities

Project methods, including limitations, are presented in [Appendix G](#). Project activities are described in [Appendix H](#). The main project activities were information collection, synthesis and analysis with regard to allied health telehealth services and workforce development programs / resources. Key information collection methods were:

- desktop review of telehealth resources and training programs relevant to allied health professions,
- interviews with clinicians and other stakeholders engaged in developing or implementing allied health telehealth services, and an
- online survey of allied health professionals in Queensland HHSs.

1.2.6 Governance

The scoping project was conducted as a partnership between the Allied Health Professions' Office of Queensland (AHPOQ) and the Cunningham Centre. The Chief Allied Health Officer, AHPOQ and Executive Director of Allied Health, Darling Downs HHS jointly sponsored the project. The Principal Workforce Officer (AHPOQ) and Principal Program Coordinator (Cunningham Centre) were responsible for project management.

A steering group was formed and met three times during the term of the project on 26/9/14, 06/10/14 and 10/11/14. See [Appendix I](#) for the steering group's terms of reference.

1.2.7 Term & resourcing

The scoping project was undertaken as part of core business by the AHPOQ and the Cunningham Centre, and within existing budgets and staffing allocations. Project work was primarily undertaken by the Principal Workforce Officer, AHPOQ and Project Officer, Cunningham Centre.

The term of the project was 12 weeks (8 September to 28 November 2014). Project closure activities, including finalisation and publishing of this report, was undertaken until January 2015.

2. Findings and outputs

The information generated by the scoping project provides some key learnings in relation to allied health telehealth services currently implemented or in development, barriers and enablers, resources available and needed (including training resources and programs), and views of clinicians on the applicability of telehealth to allied health service delivery.

2.1 Deliverables

The deliverables of the project are:

1. Compilation of information sourced on telehealth-supported allied health services including existing resources (e.g. standards, guidelines, training programs, service model information).

Deliverable 1 is presented in a series of appendices to this report as follows:

- [Appendix A](#): Summary of allied health telehealth-supported service models
- [Appendix B](#): Summary of clinical tasks and functions delivered using telehealth
- [Appendix C](#): Summary of survey results
- [Appendix D](#): Summary of locally-developed allied health telehealth resources
- [Appendix E](#): Summary of telehealth training programs and resources
- [Appendix F](#): Summary of telehealth online resources

2. A completion report to guide the collaborative development by AHPOQ and Cunningham Centre of a provisional telehealth capacity building plan for consultation with stakeholders.

2.2 Results

Data collection from key informants comprised:

- 52 interviews (including 8 from interstate and the remainder from Queensland public health system),
- 128 survey responses (all from Queensland public health system), and
- information collection from a small number of informants through other means e.g. email, conference papers, and informal discussions.

The survey and interview participant groups achieved satisfactory diversity of professions / work roles and locations (including metropolitan, regional, rural and remote) to be considered broadly consistent with the profile of the Queensland Health allied health workforce (see [Appendix J](#)). Some gaps in informant groups are discussed in section 3.2.

2.3 Findings

Findings from the scoping project were synthesised from interview and survey responses and literature/key documents, using the broad structure of the preliminary telehealth capacity building model as a guide to the analysis (see Section 1).

2.3.1 Utilisation of telehealth by allied health professions

1. Models

Two primary models of telehealth use were identified in the scoping project; dual clinician and direct client service. The dual clinician model can be further divided by the type of healthcare worker present with the client at the recipient site, as this was found to influence the scope and complexity of services delivered. The models are summarised in Table 1 and described in detail below.

Table 1. Models of allied health telehealth services

Hub site	Recipient site (client present)	Model variants and descriptive terms used by informants
Dual clinician model		
AHP	AHP (same profession)	<ul style="list-style-type: none"> Hub site clinician leads and primarily delivers session (“consultant” or “specialist” telehealth session) Hub and recipient site AHP jointly deliver telehealth session / service (“shared care”) Recipient site clinician delivers the service with the hub site clinician contributing advice (“case review”) or formal supervision of service delivery (“supervised practice”)
AHP	Other health profession	<p>The recipient site clinician may be an AHP of a different profession to the hub site clinician, a nurse, doctor or other professional.</p> <p>The recipient site clinician may provide:</p> <ul style="list-style-type: none"> ‘hands-on’ assistance for physical tasks with strong direction on task requirements provided by the hub site AHP, the majority of the service following training in the skill shared task/s. The hub site clinician provides direction and guidance, primarily during the skill sharing training period and for complex cases beyond the scope of the skill shared task, or the diagnostic procedure for hub site clinician review (e.g. offsite radiologist for breast ultrasound examination)
AHP	Allied health assistant	Telehealth is used as an enabler and/or adjunct to delegation. The relative contribution to service delivery between AHP and AHA depends of the complexity of task and extent of the AHA’s training and competency assessment in the relevant clinical task/s.
Direct client care model		
AHP	Client +/- family	<ul style="list-style-type: none"> Client attends health clinic Client attends from home using own / borrowed device (“home telehealth”)

Dual clinician model

Dual clinician models have a healthcare worker at both the hub and recipient telehealth sites. The client attends at the recipient site.

a) Hub site: AHP

Recipient site: AHP (same profession) and client

This model is used primarily to support regional, rural and remote clients to access services from urban-based practitioners with clinical expertise in a specific area of practice. The recipient site AHP is generally of the same profession (or if not of the same profession, has responsibility for a multi-professional area of practice in the local setting e.g. hand therapy can be provided by an occupational therapist or physiotherapist). The relative contribution and role of each clinician to the session varies. Most commonly, clinicians contribute relatively equally to the provision of care. This involves collaborative decision-making, generally drawing on clinical expertise of the hub site clinician in a specific practice area and the skills of the local clinician, along with their local context knowledge and existing

clinical relationship with the client. This was described by some interviewees as a “shared care” model, highlighting the joint responsibility for service provision. A small number of examples were identified where the hub site AHP primarily delivers the service, with the recipient site AHP receiving direction to undertake primarily the ‘hands-on’ clinical activities only. This situation is uncommon where the hub and recipient site clinicians are of the same profession, but may occur in highly specialised areas of practice where the skills of the local generalist clinician are limited. In another variant to the dual clinician model the recipient site AHP directs and delivers the service, with the hub site AHP taking primarily an observation role with minimal intrusion into the clinical consultation. Formal clinical supervision of the recipient site clinician’s practice is a version of this form of telehealth service. An example is telehealth-supported sonography training, which requires direct supervision of trainees while performing scans. Telehealth allows the trainee located in a rural or remote service without an onsite sonography supervisor to meet supervised practice requirements of their training program and also deliver a service to the community that would otherwise require travel to a larger centre.

b) Hub site: AHP

Recipient site: other profession (e.g. different allied health profession, nurse) and client
This model is primarily used between regional / larger rural centres and smaller outlying rural or remote centres, where practitioners of another profession are available to support the service. The role of the recipient site health professional is described in some services as highly collaborative with both clinicians inputting into the provision of care relatively equally (a version of the “shared care” model previously described). Several swallowing assessment services, currently in the development phase, illustrate this form of inter-professional collaborative care using telehealth. Urban, hospital-based speech pathologists are examining the use of telehealth to support collaborative delivery of inpatient dysphagia assessments with nursing, medical or other allied health staff in smaller rural services, to manage risks and limit unnecessary fasting or patient/speech pathologist travel. The more common inter-professional telehealth service model identified in this project involves the recipient site clinician providing support for ‘hands on’ tasks only, such as removing and reapplying dressings, or measuring client’s height and weight prior to a telehealth session.

c) Hub site: AHP

Recipient site: AHA (or other support worker) and client

This model is used primarily between regional / larger rural centres and smaller outlying rural or remote centres. AHAs in the recipient sites generally receive delegation instructions from a number of professions. AHPs provide remote supervision via telehealth, with some services including face-to-face supervision during less frequent outreach visits. The AHA may or may not have received competency-based training in the clinical tasks relevant to the service, with greater direction and guidance likely to be required from the AHP in the latter situation. An example of this model is a falls and balance class directed and supervised by the hub site physiotherapist, with hands-on assistance and exercise facilitation performed by the recipient site AHAs.

Direct client care model

Hub site: AHP

Recipient site: client (no clinical staff present during clinical intervention)

This model of direct care provision via telehealth is used in urban, regional, rural and remote areas. Most examples described by interviewees involve the client attending a HHS facility. For facility-based services, an administration officer or healthcare worker generally provides patient reception and camera/room set-up, but does not remain with the client or provide any clinical input into the session. A small number of interviewees were developing or had implemented services to client's homes using a web-based VC solution such as Cisco Jabber. Survey responses confirmed that facility-based telehealth was the most common (70%), but 20% indicated they provide a service to clients' homes. A number of interviewees described home-based telehealth intervention as a logical next step for their current clinic-based models.

2. Relationship to preceding / alternative service model

Most interviewees identified that implementation of telehealth at least partially replaced a service provided through patient travel (publicly or privately funded) or clinician outreach. Only one interviewee identified telehealth was implemented as a complete substitute for an existing outreach service. Interview and survey findings indicate that clinicians primarily regard telehealth as a complementary service strategy that improves timeliness of assessment and intervention, and increases service frequency compared to outreach models. A number of interviewees and 25% of survey respondents indicated that telehealth enables a service that would otherwise not be available to consumers.

3. Integration into service model / maturity of telehealth services

Most examples of allied health telehealth services identified in the scoping project are in the development or trial phase, or have been implemented in the last three years. A small number of services from Queensland and interstate have greater than five years implementation and/or are in the 'business as usual' stage, with telehealth fully embedded in the business and service model.

4. Drivers for development of allied health telehealth services

Many interviewees described the development of telehealth services as an "evolution", developing organically rather than as a defined service development priority or project. In some cases the first use of telehealth was driven by service requirements of a single client or small group of clients (generally where distance or social circumstances prevented adequate access to services). Initial "experimentation" in a limited number of circumstances built the clinician or team's confidence and awareness of the capabilities of telehealth and in some cases lead to wider scale implementation. Service drivers were also identified as relevant for some telehealth users, including loss of positions or difficulty recruiting or retaining staff in rural facilities, inefficiency of outreach models and workforce impacts of high travel burdens (e.g. time away from family, burnout).

A number of interviewees located at telehealth recipient sites (regional, rural and remote facilities) described their driver for the development of telehealth services in terms of patient advocacy and the need to facilitate "culture change" of tertiary facility providers. Interviewees described recognising the burden of travel on their clients when required to attend appointments in Brisbane or other major centres for review, and had brokered the use of telehealth (generally a dual clinician telehealth model).

5. Benefits

Stakeholders in this project described two primary benefits of telehealth.

a) Improved timeliness and frequency of services

Telehealth improves AHPs' capacity to engage with clients at points that are most meaningful and effective in the client's journey, rather than at stages imposed by rigid outreach travel schedules. Examples include:

- pharmacists providing medication counselling and education for inpatients of rural facilities immediately prior to discharge, rather than recalling the client for an outpatient appointment when the pharmacist was next on outreach, and
- speech pathologists working collaboratively with clinical nurses in rural facilities to provide a dysphagia assessment, allowing timely planning of diet texture and fluid thickness modification and preventing either unnecessary prolonged periods of fasting or exposure to aspiration risk through delayed assessment.

Substantial service frequency improvements were also noted by some interviewees.

Examples include:

- an increase from one to approximately five dietetics clinics annually in remote locations in far north Queensland,
- remote supervision of trainee sonographers increasing service provision in some rural and remote centres from zero to a regularly accessible service, and
- removal of a two to three month service gap experienced in a northern Queensland speech pathology service due to annual wet season road closures and travel restrictions.

b) Reduced travel for clients and/or clinicians to access services

As previously described, telehealth is used most commonly as a partial substitute for face-to-face services. Interviewees described telehealth as particularly valuable for:

- “review appointments” (shorter or less complex re-assessments to check progress with a treatment plan and revise or progress the intervention / therapy) or
- “bridging assessments” (screening or assessment for the purpose of triage and prioritisation for further review and intervention such as dysphagia assessment of an inpatient to ascertain swallowing risk and oral intake decisions of the rural/remote site or high risk foot assessment to inform scheduling decisions for podiatry review and therefore outreach or patient travel arrangements).

Reduced travel was also identified as providing direct benefits to clients' health outcomes through reducing fatigue (e.g. cancer care and liver services) and discomfort (e.g. chronic pain and musculoskeletal conditions likely to be aggravated by long car journeys).

6. Allied Health telehealth services identified in project

The project methods preclude definitive statements regarding frequency of telehealth services by profession or clinical area in Queensland HHSs. Although influenced by selection bias, interview and survey results highlight areas of allied health clinical practice with relatively high telehealth service development activity or interest expressed by stakeholders. These areas are:

- client function in the home including assessment of the home environment, equipment and therapy / retraining programs,

- mobility and transfers assessment and therapy programs and falls prevention, including non-complex equipment prescription and review,
- diabetes management (dietetics and podiatry professions primarily),
- dysphagia assessment and management (non-complex presentations),
- paediatric rehabilitation and developmental assessment,
- hand therapy (post-discharge from acute care),
- burns management (post-discharge from acute care),
- lymphoedema management (mostly associated with the statewide service redesign trial related to the *Guideline: for compression garments for adults with malignancy related lymphoedema: Eligibility, supply and costing*), and
- medication counselling (pre and post discharge).

2.3.2 Applicability and clinical effectiveness

1. Decision-making regarding telehealth use

Some interviewees reported difficulty with decision-making about clinical tasks and functions that can be safely and effectively delivered using telehealth. This was particularly the case for interviewees in the scoping or development stage of telehealth implementation. Those provided with information on existing models (e.g. speech pathologists who recently attended presentations on telehealth use hosted by their professional association and Queensland Health discipline group) expressed the value of receiving detailed, profession-specific information about how clinical services are implemented using telehealth. Other interviewees expressed difficulty finding information on telehealth models for their profession. These interviewees were not aware of other practitioners of their profession who were using telehealth, or how to source contacts and information. This was frequently reported by interviewees as a barrier to developing telehealth services.

Existing workforce and service redesign tools could be used to support decision-making with regard to telehealth. One interviewee with Calderdale Framework implementation experience identified the similarities between telehealth decision-making and delegation or skill sharing decision-making in terms of the risk assessment process and need to develop training, governance and supporting systems to implement the change. Although no examples were identified in interviews, teams may benefit from using established workforce and service redesign tools to develop robust telehealth service models.

2. Requirements to adapt clinical practice for telehealth

Interviews and survey findings indicate considerable variation exists in the degree to which AHPs need to adapt clinical tasks and functions for delivery via telehealth. Adaption is most commonly required for professions with a significant physical assessment / therapy aspect to practice e.g. physiotherapy, occupational therapy, podiatry, speech pathology. Dietetics, medical imaging, social work and psychology were less likely to identify the need to adapt their practice for delivery via telehealth. Interviewees of any profession delivering primarily subjective reviews and care planning functions via telehealth identify limited need to adapt practice e.g. hub site multi-disciplinary team reviewing client progress, or a joint review between hub site and local clinicians to examine and adjust a splint or progress a therapy program.

For those professions and practice areas impacted by inherent limitations to telehealth, the capacity (skills, time) to redesign clinical tasks/functions and care/therapy programs was identified as a key challenge and barrier to expansion to telehealth implementation.

3. Methods to adapt clinical practice

Interviews and survey responses indicate demand from clinicians for clinical task / program-specific information and examples of how to adapt practice to maximise effectiveness and safety of telehealth services. Four categories of solutions employed by interviewees to address clinical redesign requirements of telehealth are presented in summary in Table 2 and in more detail below.

Table 2. Methods used to adapt clinical services for telehealth (VC) delivery

Indications	Examples
Technological solutions	
AHP identifies limitations to visual and audio quality available with standard videoconference systems may impact safety or effectiveness of care Particularly relevant to complex / technical assessment tasks, or diagnostic testing	<ul style="list-style-type: none"> Peripheral devices (e.g. medical camera systems, lapel microphones) Bandwidth / image chain augmentation Store and forward images (e.g. wounds, scars)
Workforce and collaborative practice solutions	
“Hands-on” components of clinical tasks Periodic requirement of recipient service for ‘external’ expertise e.g. uncommon presentations or complex cases. Particularly relevant to rural and remote generalist AHP services and skill sharing.	<ul style="list-style-type: none"> Rural generalist AHP engaging with a ‘clinical expert’ in a larger centre AHP service supported by a clinical nurse in a remote site Telehealth support for remote supervision of delegation to AHAs
Care planning solutions	
Relatively structured care plans (e.g. post-operative protocol), chronic conditions or other clinical presentations with relatively predictable care needs at different points in the client journey.	<ul style="list-style-type: none"> Patient selection for telehealth Session selection e.g. use of telehealth for review / lower complexity intervention sessions in client’s treatment course, and face-to-face for longer / complex sessions Advanced planning of equipment / therapy resource requirements
Task adaptation solutions	
The majority of a task’s component activities can be delivered safely and effectively via telehealth, and adaption or omission of the remaining components does not significantly impact service quality. Particularly relevant to functional and standardised assessment tasks, and many therapy and education-based interventions with low acuity / ambulatory care clients.	<ul style="list-style-type: none"> Omitting or changing some components of assessments (e.g. physical assessment component of the Subjective Global Assessment) Digitising paper-based resources (stimulus for assessments, education materials) to project via VC

Technological solutions

A minority of interviewees addressed limitations of standard real-time VC technology by adapting / enhancing the technology. The primary examples of technological solutions are listed below.

a) Adaptation to standard telehealth (videoconferencing) system

High quality images, beyond that available with standard VC equipment/system specifications, is an identified need of some services. Primarily the need relates to achieving diagnostic accuracy including meeting practice standards for diagnostic testing. Examples include breast sonography and complex dysphagia assessment. Adaptations to standard systems identified in interviews include:

- peripherals such as handheld cameras with integrated lights for oropharyngeal examination and lapel microphones for speech assessment, and
- bandwidth adjustment to support high quality image transfer.

Barriers / enablers for allied health services developing and implementing telehealth models requiring non-standard equipment are:

- access to individuals with relevant expertise in image chain and data transfer e.g. medical physicists,
- funding for equipment, and
- available information or evidence on equipment options, as services using non-standard equipment are found in this scoping project to generally be novel or experimental (i.e. being trialled as a pilot research project).

b) Store and forward images to augment real-time VC

Photographs (transmitted with store and forward systems in some settings) are used to address issues of VC image quality. The primary clinical indication of photography identified in this project is review of wounds and scars e.g. hand therapy, burns and plastics, foot care. Photography is a key enabler of some telehealth services, with one hand therapist identifying that if no photographs are available of the wound/scar, the telehealth session is not effective and requires rescheduling.

Issues were identified in the availability, reliability and usability of store and forward technology. The other major barrier identified in interviews is negotiating with busy recipient site staff to take and send photographs prior to the allied health telehealth session and also the skills of recipient site staff in photography for clinical purposes (e.g. lighting, composition).

c) Other technological solutions include:

- loading electronic versions of forms or picture stimulus on a computer and toggling between the camera and computer inputs to project the image on to the recipient site computer (e.g. language, perception or cognition assessment tools), and
- use of a tablet-based screening tool for patients to complete prior to the session (e.g. in waiting room).

Workforce / collaborative practice solutions

Some clinicians address limitations of telehealth by developing the capacity of recipient site staff to provide “hands-on” activities. For example, nurses in remote facilities support AHP telehealth services by completing basic anthropometric measurements, vital signs, spirometry and

arranging pathology, or removing casts, splints or wound dressings prior to the telehealth consultation. Allied health assistants provide on-site supervision of falls and balance class exercises or assist home environment reviews.

Profession-specific dual clinician telehealth services often include up-skilling recipient site practitioners in advanced skills prior to or as a part of the telehealth model. This allows the local clinician to undertake complex assessment or intervention tasks with the support of the hub site clinician during the telehealth consultation and in subsequent one-on-one sessions with the client. Examples include pre-telehealth implementation outreach visits by a hub site physiotherapist to the recipient site physiotherapist to provide training in advanced manual therapy techniques, or lymphoedema therapists providing guidance and supervision of compression garment prescription for rural therapists.

Although not described by interviewees in this project, formal skill sharing models (with structured training and competency assessment) could support delivery of more complex and comprehensive clinical services than are currently delivered using telehealth. It would also support safety and clinical governance. A small number of examples were identified in the scoping project where telehealth was used as an adjunct to competency-based AHA service delivery. Blending telehealth and delegation models that incorporate competency-based training and supervision, is an important opportunity for service expansion in rural and remote locations without a resident AHP workforce.

Care planning solutions

Telehealth may not be applicable to all clients in an AHP's caseload or to the entirety of a client's clinical intervention program.

a) Patient selection

A small number of teams examined in the scoping project were developing patient selection 'guidelines' for telehealth that were specific to their caseload and setting. Some aspects of patient selection were identified as common to all / most situations e.g. consent, English language / communication capacity. Some were specific to the profession and clinical area and formed indications and precautions for telehealth relevant to the AHP's practice (e.g. specific clinical populations or client characteristics, or triage / assessment findings).

Decision-making on client characteristics that either indicate or caution use of telehealth should be built into new and existing telehealth models to enhance safety and clinical effectiveness. Documenting these considerations is likely to support sustainability of local telehealth implementation initiatives by providing a resource to orientate new staff and contribute to evaluation and quality monitoring. Any statewide resources developed to guide implementation of clinical tasks / functions by telehealth for the AH professions should include patient selection considerations.

b) Session selection and planning

Some stages of the program may require longer or more complex clinical tasks (e.g. comprehensive psychological testing) or "hands-on" intervention (e.g. nail surgery or manual therapy). Integrating telehealth into program planning balances the limitations and opportunities for telehealth use, but does require foresight and experience of the practitioner. A number of interviewees noted that limitations to predictability of clinical progression can create inefficiencies and frustrations for the client and clinicians.

Examples were provided by a number of interviewees of clients attending the recipient site facility for a scheduled telehealth consultation but the client's presentation differed from that

anticipated and required rescheduling for a face-to-face consultation. This was noted by one interviewee to be infeasible to completely eliminate. Careful patient selection, guidelines or other supporting documents for clinicians (particularly less experienced clinicians) and, embedding telehealth into clinical pathways (e.g. post-surgical or post-partum pathways) may limit this issue.

Adapting practice for telehealth through planning and preparation was also discussed by interviewees in the context of equipment. Some telehealth service require advanced planning by the clinician to send relevant equipment to the recipient site e.g. podiatrist sending offloading shoes, occupational therapist sending a splint or splinting materials, and speech pathologist preparing and emailing visual stimulus for a therapy session to a rural clinic administration officer for printing.

Task adaptation solutions

Clinicians amend clinical tasks by removing component activities that are difficult to deliver via telehealth e.g. a dietitian does not perform the physical assessment component of the Subjective Global Assessment (SGA). Alternatively these activities may be undertaken but clinicians accept a potentially inferior outcome than that expected from face-to-face consultations e.g. scar assessment performed using photographs and VC visual images, and information from a clinic nurse describing mobility/adhesions and other qualities of palpation. Some interviewees described a willingness to accept the limitations of telehealth for specific clinical activities / tasks by balancing this against service frequency or timeliness benefits, preference of the client and efficiency of the service (i.e. opportunity costs of outreach travel). A clinical task requiring modification was also described by interviewees as more acceptable if it is only a component of a broader program of assessment or intervention e.g. SGA is one of a range of assessment processes used by dietitians to examine nutrition status and so the test's output can be considered by the dietitian in the context of a broader clinical examination and clinical reasoning process.

4. Relationship between hub site AHP and recipient site

Hub site clinicians' familiarity with and/or understanding of the service and community context of the recipient site was identified in interviews as an enabler of clinical effectiveness. Examples include dietitians understanding food security issues, and pharmacists understanding medication storage and access in remote health facilities. Some services develop this understanding through ensuring new clinicians undertake one or more outreach visits to the recipient site prior to commencing telehealth service delivery. This need was mostly expressed by interviewees in relation to telehealth service models without health professional involvement at the recipient site (i.e. where the hub site AHP was solely responsible for clinical recommendations / decisions). A number of interviewees in telehealth hub sites (metropolitan and regional facilities) described one benefit of a dual clinician telehealth model as enabling the local AHP, nurse, or AHA to support contextualisation of clinical advice and recommendations.

Telehealth can present challenges to clinical effectiveness in terms of "visibility" of the AHP service in the recipient site. Several interviewees described issues with receiving referrals and timeliness of referrals as they were not physically present in facility and not part of incidental conversations in the team (e.g. discharge dates). Change management awareness raising with staff and community members, clinical pathways, linking in to handover or ward rounds and other procedural strategies may limit this issue.

2.3.3 Efficiency

1. Inputs / costs

Equipment purchase and recurrent costs

Device purchase and recurrent costs are generally borne by other HHS business units, although tablets and non-standard equipment are more likely to convey a direct cost to the allied health service.

Workforce inputs / costs: allied health

The time intensive nature of telehealth-supported services was a common theme in interviews. In the scoping / development stage staff time needs to be allocated to the clinical and service redesign process including designing the telehealth service model, negotiating responsibilities between sites, awareness raising and change management with stakeholders, coordinating procurement and development of coordination processes such as scheduling etc. Once past the development stage, the time-consuming features of telehealth services were reported as:

- administration including scheduling, coordinating bookings for sites / VC units / clients / recipient site staff, liaison with the recipient site to arrange patient reception and VC equipment setup, and
- preparation in advance of telehealth sessions including anticipating and planning assessments / interventions, preparing and sending testing materials or equipment, and liaising with clinical staff at the other site regarding the session plan.

Clinicians who do not have access to administration / telehealth coordination support were more likely to report that telehealth is “process burdened”. A number of strategies were identified by interviewees that can limit the time intensiveness of telehealth.

- Regular clinic times rather than ad hoc scheduling systematises administrative processes, such as clinical facility and VC unit bookings etc. However, regularly scheduled clinics are often not possible for highly dispersed client groups and lower frequency presentations (e.g. paediatric head injuries, burns).
- Real-time booking systems allowing VC units, rooms and clinical appointments to be viewed and booked simultaneously. Booking systems that rely on contacting parties at other sites by email or phone and awaiting a response are regarded as inefficient and frustrating for AHPs. One interviewee likened it to a game of ‘snakes and ladders’ with an unsuccessful booking of any of: the hub site VC unit, hub site clinic room, recipient site VC unit, recipient site clinic room, recipient site clinical staff or the client, necessitating all arrangements to that point to be cancelled and the multi-step booking process to begin again from scratch.
- Telehealth Coordinator positions (where available) are strongly supported by clinicians as a key resource to enable efficient telehealth service coordination. Some interviewees estimated the time required for Telehealth Coordinators to complete tasks such as equipment procurement and setting up HBCIS clinics for telehealth to be significantly less than is required of clinical staff doing the same tasks due to familiarity with processes and systems. Scheduling telehealth services was described as “a nightmare” by one interviewee, noting that efficiencies are gained by having one or a small number of roles responsible for scheduling. This model allows for development of process knowledge and skills of the individual, and economies of scale in scheduling procedures and workload across a service or facility. Centralisation of administrative processes was also described as also an enabler / driver for the development of regularly scheduled clinics from ad hoc service models.

Telehealth Coordinators (or similar telehealth support roles) generally do not convey a direct cost to allied health business units in Queensland HHSs currently. However ongoing administrative resource requirements should be considered in longer term allied health business planning for sustainable telehealth services.

- Increasing numbers of MOVI (computer-based videoconference) devices, located in AHP clinic rooms or offices improves ‘hassle-free’ and efficient access for clinicians. Interviewees noted that MOVIs and small department-based units encourage embedding of telehealth in the normal model of care of the service. One interviewee noted that telehealth equipment is increasingly seen as just another clinical tool in the department, “like a photocopier, it’s part of the furniture, not something special or scary”.

Workforce inputs / costs and capacity: recipient site staff

Staffing at the recipient site, particularly in remote areas, is a challenge for allied health telehealth services. An interviewee described her concerns that her telehealth service is “a drain” on remote area staff, diverting them from their own high workload. This collegial and practical concern is a primary barrier to AHPs pursuing development of a telehealth service and examining expansion of existing services. This issue was raised particularly in relation to dual clinician telehealth model involving another health profession (different AH profession, nurse). As AHA roles support AHP services, interviewees did not view AHA time investment in telehealth services as a cost in the same way as other workforce groups whose duties were primarily unrelated to the AHP telehealth service.

Staff support at the recipient site may be required for a range of activities, depending on the setting and service requirements including:

- assisting the client to attend their appointment, particularly in remote areas, where health service staff may need to leave the clinic to transport the client to and from their appointment,
- patient reception and session set-up,
- preparatory clinical activities (e.g. taking blood pressure, weight measurement), and
- clinical activities during the session (e.g. removing or adjusting splints, preparing thickened fluids for trialling, removing and reapplying wound dressings)

Several interviewees described that a flexible approach is required when providing telehealth services to small, remote facilities as emergent situations or competing outreach clinics can lead to last-minute cancellation of the allied health telehealth clinic.

Opportunity costs of telehealth

As indicated above, workforce ‘costs’ of telehealth implementation were often described in terms of opportunity costs, rather than direct monetary costs to the team / service. This was mostly commonly expressed in terms of the clinical (or administrative) activity foregone by allocating AHP and/or administration time to telehealth services. Definitive data on workforce (time) costs of telehealth compared to face-to-face services was not available from informants and not identified in the literature. One interviewee identified that the total time required to complete one telehealth occasion of service (OOS) is equivalent to between two and three face-to-face OOS, if preparation, scheduling, coordination and follow-up activities are considered. Another estimated it to be between three and four OOS. For AHPs in highly structured and supported telehealth service models (primarily statewide tertiary or quaternary services with dedicated telehealth coordination roles in the team), the time investment for the clinician was reported as not significantly greater than face-to-face service provision. These findings highlight

that telehealth implementation imparts a cost to the health service in terms of clinical service delivery time, either through clinician time or staffing allocation from clinical to telehealth coordination functions.

2. Cost effectiveness and efficiency

Balancing and offsetting costs of telehealth

Strategies identified in the scoping project to either balance or offset costs incurred by the implementation of allied health telehealth services are described below.

a) Travel savings

The most commonly cited strategy to offset telehealth costs was savings in direct travel costs and AHP travel time associated with at least partial substitution of an outreach service. The former includes savings in vehicle costs, flights / ferry fees etc. for clinician outreach, and/or Patient Travel Subsidy Scheme (PTSS) costs. The latter allows time to be reallocated from clinically unproductive travel time to increase service capacity. This may in turn positively impact activity targets, waiting lists, patient access and other performance indicators.

Numerous interviewees also identified the rationale for development of their telehealth service was limiting travel costs for clients, including direct transport costs and time off work.

b) Activity generation and revenue

Activity-based funding (ABF): Increasing activity to capitalise on ABF opportunities was identified as a strong incentive for implementing telepharmacy. ABF-related impacts were not identified as an incentive by any other professional group. This may relate to the difference between the base price in outpatient Tier 2 Price Weights for clinical pharmacy (\$711 new and \$1002 review) compared to other allied health professions (e.g. physiotherapy new \$130, review \$227; podiatry new \$277, review \$250; psychology new \$188, review \$159)^[1], or that allied health services in other professions may be more likely to sit outside ABF funding criteria (e.g. community allied health services), or may reflect differences in financial organisation / distribution processes in health services. Note: this funding model is not specific to telehealth, and there is no evidence from the scoping project that it is a disincentive for non-pharmacy allied health teams to implement telehealth, only that it was specifically identified as an incentive for pharmacy.

The Queensland funding model for telehealth which, unlike the national system, allows health services to register activity at the hub and recipient sites^[1], was identified by a small number of interviewees as an important enabler for telehealth expansion. The strategy has particular relevance for telehealth services that currently use a dual clinician model (e.g. AHP at hub site and AHP or other health professional at recipient site). These services would be impacted if funding rules changed in future to align to the national model. Work is required to transition AHP telehealth services to a direct client care model where clinically safe and feasible to do so, or to a less resource intensive model such as AHP at the hub site and AHA assisting the client at the recipient site.

Medical Benefits Schedule (MBS): MBS item numbers for telehealth services exist for specialists, and for medical practitioners, nurse practitioners, midwives, practice nurses, Aboriginal and Torres Strait Islander health practitioners or Aboriginal health workers where they support a client during a video consultation with a specialist, consultant physician or psychiatrist.^[2] There are no MBS items for allied health practitioners. One interviewee

identified this as a barrier for expanding AHP telehealth services in the health sector generally, though the impact for Queensland publically-funded services is unlikely to be significant given current funding structures.

c) Work organisation within the team

Work and task reallocation within the team was identified by a small number of interviewees to assist efficiency of telehealth services. Examples include AHAs supporting scheduling and session preparation (e.g. equipment / resource planning), and reorganisation of clinical responsibilities in a team to allocate time for telehealth service development or delivery to specific team members.

d) Securing support from other business units or funding bodies

Negotiating in-kind support from HHS Telehealth Coordinators or from hub / recipient sites can limit costs of telehealth incurred by allied health services and make development of new telehealth services feasible, especially for rural or remote allied health teams with small establishments and limited resources. A number of interviewees had secured funding or in-kind support from outside their HHS through research grants, or the Department of Health (e.g. CARU and Health Support Queensland assistance with equipment/technical matters, or AHPOQ support for clinical redesign capacity through the Allied Health Rural Generalist Training Positions initiative).

e) Development phase activity adjustments

Temporary adjustment to service activity targets has been used in other clinical redesign projects (e.g. delegation, skill sharing) to accommodate clinician time investment in development and start-up activities. The strategy could be applied to the telehealth service development initiatives particularly in small teams with limited residual capacity.

f) Equity, access, acceptability

Interviewees emphasised that managing time and resource investment in telehealth is not simply about budget considerations. Investment in telehealth may be balanced by positive impacts on equity of service access and acceptability to clients. A minority of interviewees had undertaken formal client satisfaction evaluation as a component of their telehealth implementation. Of these, none reported low satisfaction or issues with acceptability of the service. However, further work is required to collate and examine client satisfaction across allied health telehealth services, including factors associated with satisfaction.

Cost effectiveness

The issue of cost effectiveness was raised by a number of interviewees, with some cautioning against perceptions that telehealth is invariably a cost minimising strategy for allied health teams. Most examples of telehealth implementation identified in this project include at least a component of additional or complementary services beyond that previously provided. For example, service frequency and OOS is greater than a previous outreach service, or telehealth now provides a service to a location where there was previously none available. Improved technical efficiency (i.e. greater activity output for the same monetary cost of service) was the most commonly reported service outcome of telehealth implementation. The outcome was generally reported as anecdotal with limited rigorous evaluation of service efficiency impacts. Additionally, cost effectiveness evaluation beyond basic activity metrics lacks data (i.e. clinical effectiveness / outcomes) but a small number of current research projects, primarily in speech pathology, include health economic analysis.

2.3.4 Service redesign and sustainability

1. Barriers and enablers to service redesign / development

Service development / redesign

Time investment to scope, develop, trial and evaluate telehealth services was identified as a significant barrier by some informants. Uncertainty about effectiveness, clinical applications relevant to the profession and perceived difficulty accessing information on clinical use of telehealth in the profession contribute to this issue. Some interviewees identified limited service redesign experience and perceived difficulty accessing advice and support to be barriers to implementing telehealth. The survey confirmed that confidence with service redesign is a major barrier to the development of telehealth services. Support is required for:

- change management including stakeholder engagement and negotiation with the recipient site,
- planning, managing, evaluating and reporting on the service change,
- sourcing appropriate technology for the clinical purpose,
- establishing administrative processes like scheduling, billing and revenue (setting up HBCIS clinics etc.), and
- advice on matters such as confidentiality and security requirements, consent, and clinical and activity information management.

A number of interviewees supported this finding through highlighting the importance of service development leadership in their telehealth implementation. In some settings the Telehealth Coordinator provided this enabling function, and in others the team leader / manager or senior practitioner guided the change process.

Recipient site staff engagement and support

Recipient site staff engagement was one of the most commonly cited determinants of successful implementation of allied health telehealth services. Survey data indicates that developing a sustainable partnership with the recipient site is regarded as the most significant barrier to allied health telehealth services. Enablers for generating engagement and support for new telehealth services include:

- recipient site staff perceiving value to patient outcomes of the service,
- stable staffing allowing relationship building between the AHP and recipient site staff,
- AHP outreach visit/s to the recipient site to build relationships with staff,
- regularly scheduled clinics rather than ad hoc scheduling, and
- negotiation and recording of responsibilities of hub and recipient site staff in a Work Instruction or similar document.

Recipient site staff clinical capabilities and collaborative practice

Clinical capabilities of recipient site staff with regard to the telehealth-delivered AHP services are integral to safe and effective practice. This finding is relevant to all dual clinician models including those involving AHPs of the same or different profession to the hub site service provider, AHAs or other health professionals such as nurses. Some interviewees described the development of “trust” in the other worker’s skills as an important component of the telehealth-supported collaborative practice model. Strategies used to maximise alignment between clinical requirements of the telehealth service and capabilities at the recipient sites include:

- identifying preference for specific skill sets of the recipient site staff in the service model (where possible) e.g. child health nurse in a rural centre supporting a paediatric speech pathology telehealth session,
- training and case discussions between the hub site AHP and recipient site AHP or nurse (via telehealth and/or face-to-face site visits), which focus on:
 - enhancing collaborative practice including effective communication and inter-professional partnerships,
 - developing a shared understanding of relevant, high frequency clinical tasks and the role of the recipient site clinician, and
 - developing skills in relevant clinical activities such as movement observation, palpation, goniometry, sensory testing, photography etc. required of the recipient site clinician to augment information available to the hub site AHP via videoconference.

Note: competency-based training of recipient site professional staff was not identified in interviews as a currently employed strategy. However, a number of interviewees raised this as a method to improve the number and quality of clinical tasks provided at the telehealth recipient site. Example tasks include dysphagia assessment and wound debridement. Existing resources used to implement skill sharing developed using the Calderdale Framework could be used for this purpose, including the [Framework for local implementation and support of skill-sharing](#), [Guidelines for skill-sharing between allied health professionals](#) and [Clinical Task Instructions](#).

- competency-based training for AHAs (linked to Calderdale Framework Clinical Task Instructions and related resources). Example tasks identified by interviewees include assisting a musculoskeletal assessment including goniometry and manual muscle testing, assessment of high risk feet, facilitating movement and upper limb therapy programs.

2. Evaluation

Informants identified limited evaluation had occurred to date of most allied health telehealth services. This may relate to the common scenario of telehealth services developing in response to a specific client need and subsequent evolution to a more frequent service. One interviewee noted that this evolution process of service development had not included usual service change processes such as development of a project or evaluation plan. Occasions of service (OOS) data is an exception, with most interviewees capturing this through HBCIS or PI5 (or similar system). A small number of examples of rigorous evaluation of telehealth implementation were identified, generally associated with PhD student projects or funded research projects, and with Allied Health Rural Generalist Training Position sites, which have annual reporting requirements.

The need for evaluation of telehealth services was widely supported by informants. Specifically, non-inferiority studies of telehealth services compared to traditional models, and cost effectiveness studies are required. Supporting strategies may include:

- prioritisation of telehealth evaluation projects in research funding rounds (Note: a telehealth projects have been funded in previous Health Practitioner Research Grant rounds),
- publication of evaluation resources (e.g. templates, examples of evaluation plans),

- facilitating allied health teams to access evaluation expertise (e.g. Research Fellows, experienced researcher in an HHS or university), and
- embedding evaluation in the implementation plans for telehealth services.

3. Sustainability

Consistent with other redesign processes, sustainability of the new model can be threatened by over-reliance on skills of one or a small number of staff and failure to integrate the change completely into the accepted business model. Formalising telehealth in the service model through regular clinic schedules, integration into orientation and induction processes and staff training, clinical pathways and service documents such as business and service plans, role descriptions, budgets, outreach schedules etc. is required to support sustainability.

2.3.5 Technology and infrastructure

1. Standard telehealth technology and fitness for purpose

Interview and survey data indicate that AHPs generally assess telehealth as appropriate for delivery of a subset of clinical tasks and functions in the scope of their profession or service area. Key points identified in relation to fitness for purpose of real-time videoconference for clinical service delivery are:

- MOVI (computer-based videoconference system) was identified by one or more dietitians, psychologists, physiotherapists, occupational therapists, speech pathologists, social workers and podiatrists as providing adequate image quality for telehealth consultations, though rigorous evaluation is very limited with respect to the effectiveness of different VC systems,
- the ability to control the recipient site camera in order to focus on the clinically relevant area is useful for AHPs delivering services which include physical assessment or other physical function or movement-related tasks,
- large ‘mobile’ VC units were identified as not well suited to inpatient telehealth intervention (e.g. bedside swallow assessment, pre-discharge clinical pharmacy or dietetics review) due to time-consuming movement and setup for the recipient site nursing staff, and
- connectivity failure was not reported as common with clinic-based systems, though could cause significant clinical care and administrative disruption when it occurred (i.e. rebooking patients, treatment progression delays). Reception “black spots” in rural and remote areas commonly impact use of mobile devices.

For some clinical applications standard equipment was viewed as inadequate, prompting clinicians to seek solutions including adjustments to the clinical task, more strictly defining criteria for patient selection for telehealth (e.g. low risk, low complexity) or acquiring additional or non-standard telehealth equipment (see Section 2.2.2).

Specific challenges were identified for use of telehealth with clients who do not speak English as a first language due to impaired visual cues and gestures that usually support communication. This concern was identified by a number of interviewees currently using or developing telehealth services for remote areas or specifically for Aboriginal and Torres Strait Islander communities.

2. Access

Access to telehealth equipment was generally regarded as adequate, but there was variation noted across services and settings.

Issues raised in relation to access include:

- inappropriate location of telehealth units for clinical purposes (e.g. in staff tea room),
- difficulty accessing private clinical rooms for consultations in hub or recipients sites (noted to not necessarily be an issue specific to telehealth),
- telehealth equipment set-ups that do not suit all clinical requirements e.g. cameras mounted high on a wall or ceiling for emergency management support are poorly suited for speech pathology or hand therapy applications, and
- rooms and equipment requiring booking through an intermediary (e.g. administration staff or clinical nurse), rather than the clinician being able to directly book in real-time (e.g. arranging the follow-up appointment at the end of a session with a client).

3. Procurement process, support and timeframes

Extended timeframes (4-8 months) were noted by several interviewees for the procurement, delivery and set-up of telehealth equipment, particularly in rural and remote areas. Service impacts were noted to result. Interviewees identified support requirements in relation to:

- selection of telehealth equipment to meet service objectives,
- investigation and procurement of non-standard technology including peripheral devices, data transfer solutions, and telemonitoring options, and
- coordination of procurement, delivery and set-up of telehealth systems to prevent delays from equipment being misdirected, remaining boxed up at the recipient site etc.

4. Technical support

Interviewees expressed high levels of satisfaction with the support provided by the statewide telehealth helpdesk. A number of interviewees also cited a loss of momentum for telehealth implementation during restructure of statewide telehealth support in 2012 and 2013 as evidence of the important role of a central unit with telehealth expertise. Increased or more consistent access to advice and consultancy support was an identified need in relation to:

- iPad / tablet devices (inconsistency of advice on use of tablets in Queensland Health was noted by several interviewees),
- image chain modification strategies (e.g. bandwidth adjustment), and
- clinical task / function-specific hardware (e.g. peripheral devices) and software (e.g. clinical apps such as movement analysis apps).

2.3.6 Training and support needs

1. Networking and inter-agency/HHS collaboration

Improved communication and networking structures for clinicians implementing telehealth is an identified need of AHPs. Project informants recommend profession-specific networks or contact lists to source advice or examples of clinical practice using telehealth, and inter-professional networks for service development and other non-profession specific matters.

2. Training and resource needs

Clinical redesign

Informants identified the following resources would be valuable for AHPs developing telehealth-supported services:

- Training and tools to support decision making about the clinical tasks and functions to be included in the telehealth service. Most interviewees recommended that examples of existing services be presented in a practical, work-based format. Specific information should be provided on ways clinical programs and tasks have been adapted for delivery via telehealth with a focus on maximising effectiveness, reliability and safety. This was described by interviewees as understanding what can be done via telehealth, what are the limits of telehealth with regard to a specific profession's practice and clinical tasks, and support for the clinician to make clinically sound and defensible decisions regarding the extent of telehealth use in their service model. In addition to using examples, a small number of interviewees identified opportunities for using risk-based task analysis tools (e.g. the Calderdale Framework) to support decision-making.
- Training programs and supporting resources (e.g. quick reference guides, checklists) for AHPs and professional staff needing to support AHP-delivered telehealth services, particularly common clinical tasks such as dysphagia assessment, mobility assessment and aid prescription / trial etc.
- General allied health telehealth consultation support and set-up (e.g. camera set-up for mobility assessment, lighting for wounds assessment, audio for speech therapy etc).

Service redesign

Informants identified the following resources would be valuable for AHPs developing telehealth-supported services:

- Business planning information, support and resources (e.g. funding/financial information, device purchase and recurrent costs, comparative OOS time investment of staff)
- Telehealth set-up resources to establish regular clinics (e.g. planning, scheduling and procedural resources, checklists for negotiating responsibilities of hub and recipient site staff/units),
- Evaluation tools and an evidence portal to inform service development planning and implementation, and
- Strategies and templates for awareness raising with community members and staff with regard to new telehealth services.

Technical and operational

Many interviewees identified limited need for technical training on standard VC equipment, with some noting that the ubiquitousness of tablets, smart devices, and Skype or FaceTime and similar personal communication applications has improved the confidence and capabilities of staff with respect to telehealth technology. However, the survey results indicate greater need for technical / equipment training than was evident in the interviews. This is likely to relate to the interview recruitment strategy which primarily targeted telehealth-active AHPs. The survey outcomes are probably more representative of general AHP staff training needs. However, even within the survey, technical skill development was a lower priority than clinical and service redesign training and support.

3. Training format

Some interviewees provided information on preferred formats for training. A focus on examples of clinical tasks and programs delivered via telehealth is strongly supported. Flexible delivery via VC and 'on demand' presentations with supporting videos and printed materials is favoured, along with train-the-trainer inservice-style resources that could be implemented in local professional development or network meetings. A master class-style format (clinical expert AHP at hub site and client +/- generalist AHP at recipient site, with other sites observing the telehealth session) was suggested as a method to improve understanding of the capabilities of telehealth for the relevant profession, whilst simultaneously delivering professional development for participants.

Two interviewees had undertaken clinical placements (AHPEP) to, in part, examine telehealth service models including administrative processes (e.g. billing / revenue, HBCIS scheduling) and clinical service delivery via telehealth. Both regarded this as a valuable strategy for services preparing to implement telehealth, reflecting a need to develop links between teams at different stages of implementation to support peer learning and sharing of solutions and resources. Collaborative networks, either profession-specific or inter-professional, were raised as a potential enabler for the expansion of telehealth, allowing experienced telehealth users to interact with those in a scoping phase.

3. Project performance and closure

3.1 Project performance evaluation

The project was completed within agreed timeframes and resource allocation. The only significant deviation from the agreed project plan was a reduced scope of the desktop review that was originally planned to include review of literature in relation to telehealth effectiveness for allied health professions. The timeframe of the project and diverse group of professions made this infeasible, and the presence of key evidence repositories also limited the value of undertaking this work in the scoping project (see Appendix F).

3.2 Lessons learned

- The project team experienced high engagement and interest from AHPs and other stakeholders in relation to allied health telehealth services, as evidenced by relatively high levels of survey participation and interview self-identification, despite short timeframes. It is evident that telehealth is seen by many AHPs as conveying considerable promise as a service delivery method.
- The combination of key informant interviews and online survey was effective at generating a relatively high volume of data targeted to the project aims and objectives. Timeframes did not allow for further data collection. The project team has identified some gaps in the informant group that could be examined through small follow-up activities if required by project partners in the next phase of the Allied Health Telehealth Capacity Building work. These are mental health services, physical rehabilitation and equipment / aid prescription (including further examination of home-based assessment and review).

3.3 Dissemination strategy

The dissemination strategy for the project outputs and outcomes will comprise:

- publication of the report to the Cunningham Centre and AHPOQ websites,
- email notification to all project contributors and key stakeholders of the report's publication,
- tabling of the report at the Directors of Allied Health Professions' Advisory Committee meeting,
- presentation of the key findings and proposed actions arising from the project via statewide videoconference, and
- other dissemination strategies as defined by the project sponsors.

4. Recommendations

Recommendation 1: Project closure

The sponsors approve this project report and accept the project deliverables as consistent with the project plan.

Recommendation 2: Resources and training

Comprehensive resource packages and associated training products are generated to assist allied health teams to develop, implement and evaluate telehealth services. The scoping project has identified demand for resource packages for:

- a) Service redesign to support change management and planning for telehealth implementation. Resources and training should assist teams to scope the potential for telehealth implementation and manage the service change in hub and recipient sites. They may draw on related resources designed to support model of care changes for delegation or expanded scope (skill sharing), and integrate existing 'generic' telehealth resources produced by CARU or other agencies. Although highlighted as a need by the allied health workforce, the resource package may also be relevant for other professional groups.
- b) Clinical redesign for a range of specific clinical functions. Resource packages would comprise examples and detailed information on delivering the relevant clinical functions via telehealth, including telehealth model/s, task adaptation requirements / options, risk mitigation and strategies to optimise clinical effectiveness (e.g. recipient site staff skill requirements, technological strategies, task adaptations). Telehealth equipment matters including set-up and non-standard equipment options would also be relevant where they relate directly to the clinical function. Training products would support clinical skill development at telehealth hub and recipient sites, including competency-based training for AHAAs and other health professionals where relevant to the service model.

Each resource package would focus on a clinical function identified by HHSs as a priority for telehealth delivery. Priorities may be informed by outputs from this scoping project and through a consultation process with allied health leaders. Priority should be given to clinical functions which require adaptation from traditional face-to-face delivery, are difficult for rural and remote sites to access due to resident staffing availability or generalist practitioner skill sets, and those with potential to positively impact safety, quality, and clinical outcomes for rural and remote services. Scoping project findings indicate that priority areas are:

- client function in the home including assessment of the home environment, equipment and therapy / retraining programs,
- mobility and transfers assessment and therapy programs, including non-complex equipment prescription and review, and falls prevention,
- multi-professional diabetes management including diet and nutrition, and foot care,
- paediatric rehabilitation,
- dysphagia assessment and management (non-complex presentations), and
- hand therapy and / or burns management (similarities in the telehealth service model, component tasks, and target groups for training indicates potential value combining these two clinical areas in a single resource package).

Recommendation 3: Networking and collaboration

A collaborative network is developed to encourage engagement and sharing between allied health teams implementing or scoping telehealth services. The existing Allied Health Rural Generalist Training Positions (AHRGTP) collaborative telehealth network may be expanded for this purpose. The AHRGTP group currently includes membership from AHPOQ, the Cunningham Centre and CARU, along with a number of rural or remote services implementing telehealth. This group may be expanded with limited additional resource input from project partners.

Recommendation 4: Evaluation of allied health telehealth services

Increase the evaluation of allied health telehealth services in Queensland HHSs and improve dissemination of outcomes / findings to inform service development and planning initiatives. Potential strategies include continued and expanded opportunities for research funding for telehealth evaluation projects, collaboration between allied health services implementing telehealth and between services and researchers in HHSs or telehealth research centres, incentivising collaborative and multi-site telehealth service trials, and providing access to resources such as evaluation plans, surveys and data collection tools (see Recommendation 2).

Recommendation 5: Telehealth capacity building plan

The AHPOQ, Cunningham Centre and CARU, in consultation with HHS allied health professionals, telehealth coordinators and other stakeholders, use recommendations and findings from this scoping project to develop and implement an allied health telehealth capacity building plan. The plan should define the agreed outputs and deliverables which aim to support expansion of allied health telehealth services in Queensland Health, and include activities to be undertaken, responsibilities and mechanisms for coordination and collaboration between stakeholders.

Appendix A: Allied health telehealth-supported services

This appendix comprises summary information on examples of telehealth-supported allied health service delivery currently implemented or in development. A number of interviewees provided information on telehealth services that are at an early scoping or concept stage. These are not represented in this appendix. The information was drawn from key informant interviews with individuals involved in telehealth implementation (e.g. clinicians, Telehealth Coordinators, managers). Informants were identified through:

- self-reporting in response to a request for information distributed through Queensland Health and national allied health networks and communication channels, and through telehealth networks in Queensland,
- referral from other interviewees (“snowballing”), and steering group members, or
- Allied Health Rural Generalist Training Position sites implementing telehealth service development projects in 2014.

Considering the methods of identification, the list cannot be viewed as a comprehensive scan of current telehealth use in allied health services in Queensland.

Dietetics & Nutrition

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Cairns & Hinterland HHS	<p>Interviewee location: Atherton Tablelands</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p> <p>Details: Allied Health Rural Generalist Training Position site – telehealth is a nominated service development activity of the AHRGPT implementation in 2014.</p>	Primarily diabetes and malnutrition	Outpatients	Rural, remote
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p>	Primarily renal, diabetes, failure to thrive, allergy / intolerance (paediatrics), chronic disease.	Outpatients	Rural
Wide Bay HHS	<p>Interviewee location: Gayndah</p> <p>Method: Real-time VC (iPad or clinic-based unit)</p> <p>Model: AHP ⇄ AHA + client</p> <p>Phase: Implementation</p>	Malnutrition, chronic conditions (diabetes, hypercholesterolemia)	Inpatients (malnutrition) Outpatients	Rural
Metro North HHS	<p>Interviewee location: Brisbane</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client (with or without respiratory nurse or other specialised team member in attendance)</p> <p>Phase: Implementation (5 years)</p> <p>Details: Mix of telehealth (scheduled clinic) and patient travel in service model</p>	Cystic Fibrosis	Outpatients	Regional
Metro South HHS	<p>Interviewee location: Brisbane</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ AHA + client</p> <p>Phase: Implementation</p> <p>Details: Mix of telehealth (scheduled clinic) and patient travel in service model</p>	Cystic Fibrosis	Outpatients	Regional, rural, remote

Darling Downs HHS	<p>Interviewee location: Dalby</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ul style="list-style-type: none"> a) AHP ⇄ other profession (nurse or GP) + client b) AHP ⇄ AHA + client <p>Phase: Implementation</p> <p>Details: Alternate fortnightly clinics conducted by telehealth.</p>	Any dietetics referrals may be eligible for telehealth-delivered service	Outpatients	Rural
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Medical Imaging

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Breast Screen QLD	<p>Interviewee location: Townsville</p> <p>Method: Real-time, clinic-based telehealth transmission of ultrasound images.</p> <p>Model: Other practitioner (radiologist) ⇄ AHP (sonographer) + client</p> <p>Phase: Trial implementation. Approval from Breast Screen Australia National Quality Management Committee will be required to implement the model on an ongoing basis.</p>	Breast diagnostic ultrasound	Outpatients (Breast Screen)	Regional
Metro North HHS (Statewide service)	<p>Interviewee location: Brisbane</p> <p>Method: Real-time, clinic-based telehealth transmission of ultrasound images.</p> <p>Model: AHP (sonography supervisor) ⇄ AHP (rural/regional trainee sonographer) + client [interviewee at hub site]</p> <p>Phase: Implementation</p> <p>Details: Supervision model associated with Rural and Regional Ultrasound Training Program.</p>	Medical ultrasound	Outpatients	Regional, rural, remote
Darling Downs HHS	<p>Interviewee location: Toowoomba</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP (radiography supervisor) ⇄ Rural x-ray operator + client</p> <p>Phase: Implementation (trial)</p> <p>Details: Supervision model substituting telephone supervision with telehealth supervision for all x-rays performed.</p>	X-ray	Inpatients and outpatients	Rural, remote

Occupational Therapy

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
WA Health	<p>Interviewee location: Perth, WA</p> <p>Method:</p> <ol style="list-style-type: none"> 1. Real-time, clinic-based VC 2. Store and forward images <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇄ AHP (same profession) + client [interviewee at hub site] 2. AHP ⇄ other profession (nurse or other AHP) + client 3. AHP ⇄ client <p>Phase: Implementation (embedded in service model)</p>	Hands and plastics	Outpatients	Regional, rural, remote
South West HHS	<p>Interviewee location: Charleville</p> <p>Method:</p> <ol style="list-style-type: none"> 1. Real-time, clinic-based VC 2. e-Hab from clinic to client's home <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇄ AHP (same profession) + client [interviewee at recipient site] 2. AHP ⇄ client <p>Phase: Method 1 - Implementation; Method 2 - Development (ready for implementation)</p>	Lymphoedema, Hands and burns Rehabilitation	Outpatients	Remote
Townsville HHS	<p>Interviewee location: Townsville</p> <p>Method: Real-time, clinic-based VC (plus store and forward images for some clinics/sessions)</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇄ AHP (same profession) + client (and parent) [interviewee at hub site] 2. AHP and/or multi-professional team (Brisbane) ⇄ AHP + client (and parent) [interviewee at recipient site] 3. AHP ⇄ other practitioner (nurse) + client (and parent) 4. AHP ⇄ client (and parent) <p>Phase: Implementation</p>	Paediatrics – head injury, burns rehabilitation	Outpatients	Regional, rural , remote

Townsville HHS	<p>Interviewee location: Townsville</p> <p>Method: Real-time, clinic-based VC (plus store and forward images for some clinics/sessions)</p> <p>Model:</p> <p>AHP ⇔ AHP (occupational therapist or physiotherapist) + client [interviewee at hub site]</p> <p>Phase: Implementation</p>	Hands	Outpatients	Rural, remote
Wide Bay HHS	<p>Interviewee location: Gayndah</p> <p>Method: Real-time VC (iPad using Cisco Jabber) to clinic or client's home (in development)</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇔ AHP (same profession) + client [interviewee at recipient site] 2. AHP ⇔ AHA + client (in clinic or client's home) <p>Phase: Method 1 - Implementation; Method 2 - Development</p>	Model 1. Lymphoedema, burns Model 2. Home assessment (planned but yet to implement)	Outpatients	Rural
NT Health	<p>Interviewee location: Darwin</p> <p>Method: Real-time, clinic-based VC</p> <p>Model:</p> <p>AHP ⇔ other profession (nurse) + client</p> <p>Phase: Post-implementation (one-off trial)</p> <p>Details: One-off trial for specific client returning to a remote location post-discharge</p>	Hand therapy	Outpatients	Remote
Townsville HHS	<p>Interviewee location: Townsville</p> <p>Method: Real-time, clinic-based VC</p> <p>Model: AHP ⇔ client</p> <p>Phase: Implementation</p> <p>Details: Persistent Pain Management team members based in recipient site, including administration officer providing support for telehealth clinic</p>	Persistent pain management service	Outpatients	Rural, remote
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC</p> <p>Model: AHP ⇔ client</p> <p>Phase: Implementation</p>	Paediatrics – feeding, continence, developmental screening	Outpatients	Rural, remote

Pharmacy

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Central QLD HHS	<p>Interviewee location: Emerald</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p> <p>Details: Allied Health Rural Generalist Training Position site – telehealth is a nominated service development activity of the AHRGPT implementation in 2014.</p>	Eligibility not strictly defined. Target groups: service users who are 65+ years or under 18 years, on 4 or more medications or prescribed a new medication whilst an inpatient in the rural facility.	Inpatient (pre-discharge) Outpatient (complex medication management review)	Rural
Torres & Cape HHS	<p>Interviewee location: Cairns</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p>	Clients from any clinical area requiring medication counselling	Inpatients	Rural, remote
North West HHS	<p>Interviewee location: Mt Isa</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p> <p>Details: Regular clinic (scheduled in HBCIS)</p>	Clients from any clinical area requiring medication counselling	Inpatients	Rural, remote

Physiotherapy

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Wide Bay HHS	<p>Interviewee location: Gayndah</p> <p>Method: Real-time VC (iPad or clinic-based unit)</p> <p>Model: AHP ⇄ AHA + client</p> <p>Phase: Implementation for some applications and development for others</p> <p>Details: Allied Health Rural Generalist Training Position site – telehealth is a nominated service development activity of the AHRGPT implementation in 2014.</p>	Orthopaedics / Musculoskeletal Women's health Balance and mobility (rehabilitation , falls, functional decline)	Outpatients Inpatients	Rural

Sunshine Coast HHS	Interviewee location: Nambour Method: Real-time, clinic-based VC Model: AHP ⇄ AHP (same profession) + client [interviewee at hub site] Phase: Implementation	Complex musculoskeletal Women's health	Outpatients	Regional
West Moreton HHS	Interviewee location: Ipswich Method: Real-time VC – clinic-based or potentially home (scoping currently). Model: Currently scoping Phase: Early development / concept stage Details: Being developed as a clinical trial (PhD student project)	Orthopaedics / Musculoskeletal (Orthopaedic Physiotherapy Screening Clinic)	Outpatients	Regional, rural
Metro North HHS	Interviewee location: Brisbane Method: Real-time, clinic-based VC. Model: 1. Multi-disciplinary team (including AHPs) ⇄ client 2. AHP ⇄ AHP (same profession) + client [interviewee at hub site] 3. AHP ⇄ client Phase: Implementation	Cystic fibrosis	Outpatients	Regional, rural, remote

Podiatry

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Torres and Cape HHS	Interviewee location: Thursday Island Method: Real-time, clinic-based VC. Model: AHP ⇄ other practitioners (nurse, Indigenous Health Worker) + client Phase: Implementation	High risk foot Diabetes Paediatrics Other foot problems	Outpatients	Remote
Wide Bay HHS	Interviewee location: Gayndah Method: 1. Store and forward images Model: AHP ⇄ AHA + client Phase: Implementation	Diabetes Foot conditions	Outpatients	Rural

Psychology

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p>	Liver clinic (Hepatitis C treatment program), Pain clinic	Outpatients	Rural

Social Work

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Wide Bay HHS	<p>Interviewee location: Gayndah</p> <p>Method: Real-time VC (iPad or clinic-based unit)</p> <p>Model: AHP ⇄ AHA + client</p> <p>Phase: Development</p>	Scoping currently	Outpatients	Rural
New South Wales - Hunter New England Local Health District	<p>Interviewee location: Muswellbrook, NSW</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP + client ⇄ tribunal hearing</p> <p>Phase: Implementation</p>	Guardianship and mental health tribunal hearing support and representation. Counselling.	Outpatients	Rural
Mackay HHs	<p>Interviewee location: Clermont</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP + client ⇄ Medical specialist 2. AHP ⇄ client <p>Phase: Implementation</p>	Any social work referrals may be eligible for telehealth service	Outpatients	Rural, remote
Darling Downs HHS	<p>Interviewee location: Dalby Hospital</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP ⇄ client</p> <p>Phase: Implementation</p>	Any social work referrals may be eligible for telehealth service	Outpatients	Rural, remote

Speech Pathology

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Metro South HHS & UQ	<p>Interviewee location: Brisbane</p> <p>Method:</p> <ol style="list-style-type: none"> 1. Tablet-based screening in clinic (Metro South HHS) 2. Tablet-based therapy program (Metro South HHS) 3. Real-time VC from clinic to client's home (University of Queensland) <p>Model:</p> <ol style="list-style-type: none"> 1 & 2. AHP ⇔ client (AHP developed / delivered program via tablet) 1. AHP ⇔ client (direct intervention) <p>Phase: Method 1 & 2 - Implementation; Method 3 -Development</p>	Method/Models 1 & 2: Cancer care (head and neck) primarily Method/Model 3: Parkinson's Disease	Outpatients	Metropolitan, regional
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇔ AHP (same profession) + client [interviewee at hub site] 2. AHP ⇔ client <p>Phase: Implementation</p>	Cancer care (head & neck), Dysphagia, Paediatrics (feeding)	Outpatients, Inpatients (dysphagia)	Rural
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇔ AHP (same profession) + client [interviewee at hub site] 2. AHP ⇔ other profession (nurse) + client <p>Phase: Implementation</p>	Dysphagia	Inpatients	Rural
Mackay HHS	<p>Interviewee location: Mackay</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ol style="list-style-type: none"> 2. AHP ⇔ AHP (same profession) + client [interviewee at hub site] 3. AHP ⇔ client <p>Phase: Implementation</p>	Adult rehabilitation	Outpatients	Rural

Townsville HHS	<p>Interviewee location: Charters Towers</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model:</p> <ul style="list-style-type: none"> 4. AHP ⇔ AHP (same profession) + client [interviewee at recipient site] 5. AHP ⇔ client <p>Phase: Implementation</p>	Paediatrics (80%) and adult (20%) communication	Outpatients	Rural, remote
Metro North HHS	<p>Interviewee location: Brisbane</p> <p>Method:</p> <ul style="list-style-type: none"> 1. Real-time, clinic-based VC (using task-specific peripherals / adapted VC system) 2. Store and forward images 3. Real-time transmission of Fiberoptic Endoscopic Evaluations of Swallowing (FEES) and Videofluoroscopic Swallowing Studies (VFSS) <p>Model:</p> <p>AHP ⇔ AHP (same profession) + client [interviewee at hub site] (share-care model between metropolitan and regional sites)</p> <p>Phase: Method 1 & 2 - Implementation; Method 3 -Development</p>	Method 1 & 2 - Cancer care (head and neck) Method 3 – Adult dysphagia	Inpatients Outpatients	Metropolitan, regional (1 & 2)
Sunshine Coast HHS	<p>Interviewee location: Nambour</p> <p>Method:</p> <p>Real-time, clinic-based VC (using task-specific peripherals / adapted VC system and store and forward photos for model 2 below)</p> <p>Model:</p> <ul style="list-style-type: none"> 1. AHP ⇔ AHP (same profession) + client [interviewee at hub site] 2. AHP ⇔ AHP (same profession) + client [interviewee at recipient site] <p>Phase: Model 1: Development; Model 2: Implementation</p> <p>Details: Commencing scoping of an AHP ⇔ General Practice and/or AHP ⇔ client (client's home) telehealth methods.</p>	Rehabilitation and dysphagia screening [as hub site] Cancer care (head and neck) [as recipient site]	Outpatients	Regional
Wide Bay HHS	<p>Interviewee location: Gayndah</p> <p>Method: Real-time VC (iPad or clinic-based unit)</p> <p>Model: AHP ⇔ AHA + client</p> <p>Phase: Implementation (and development for dysphagia assessment)</p>	Dysphagia (yet to commence) Adult and paediatric review	Inpatients Outpatients	Rural

Mater Health Services (Brisbane)	Interviewee location: Brisbane Method: Real-time VC (to client's own device) Model: AHP ⇄ client Phase: Development and Implementation (varies by client group)	Dysarthria, aphasia therapy, paediatric communication, language development	Outpatients	Metropolitan
South Western Sydney Local Health District	Interviewee location: Bankstown, Sydney Method: Real-time, clinic-based VC. Model: AHP ⇄ client Phase: Implementation	Stuttering (adults and paediatrics).	Outpatients	Metropolitan, rural, remote

Multi-professional service models

Organisation	Details	Client group - clinical area	Client group - service	Client group - location
Darling Downs HHS	Interviewee location: Toowoomba Method: Real-time VC (iPad or clinic-based unit) Model: <ol style="list-style-type: none"> 1. AHP ⇄ Client 2. AHP to AHP (another profession) + Client Phase: Implementation Details: HAHT (HACC eligible Allied Health Team) based in Toowoomba do outreach visits to client's homes and link back to base using iPads in order to conduct further assessments or consultations by other team members.	HACC eligible clients	Outpatients	Regional, rural and remote
WA Country Health Services (WACHS)	Interviewee location: Various locations in WA (NOTE: overview information on WA telehealth models provided by interviewee) Method: Real-time, clinic-based VC Model: <ol style="list-style-type: none"> 1. AHP ⇄ AHP (same profession) + client 2. AHP ⇄ other profession (e.g. nurse) + client (referred to as "intra-regional model" in WA) 3. AHP ⇄ client (example include hub site being WACHS AHP, and hub site being external agency AHP) Phase: Various.	Various e.g. hands and plastics, cerebral palsy.	Outpatients primarily	Regional, rural, remote

The Cerebral Palsy Centre (WA)	<p>Interviewee location: Perth, WA</p> <p>Method: Real-time, clinic-based VC</p> <p>Model:</p> <ol style="list-style-type: none"> 1. AHP ⇔ AHP (same profession) + client [interviewee at hub site] 2. AHP ⇔ client (infrequently trialled in past) <p>Phase: Implementation (embedded in service model)</p> <p>Details: Physiotherapy, occupational therapy, speech pathology disability services provided statewide (single discipline and joint sessions)</p>	Cerebral palsy and other disability.	Outpatients	Regional, rural, remote
South West HHS	<p>Interviewee location: Roma</p> <p>Method: Real-time, clinic-based VC</p> <p>Model: AHP ⇔ AHA + client</p> <p>Phase: Implementation</p> <p>Details: Diabetes Educator provides a telehealth clinic from Roma to St George, Dirranbandi and Mungindi. AHA travels from St George to other recipient sites to support the clinic.</p>	Diabetes	Outpatients	Rural and remote
South Australia Health	<p>Interviewee location: Various locations in SA (NOTE: overview information on SA telehealth models provided by interviewee)</p> <p>Method: Real-time, clinic-based VC</p> <p>Model:</p> <ol style="list-style-type: none"> 1. Medical professional ⇔ AHP + Client 2. AHP ⇔ AHP + Client 3. AHP ⇔ other profession (e.g. nurse) + Client 4. AHP ⇔ AHA + Client <p>Phase: Various.</p>	Various e.g. physiotherapy follow up after joint replacement surgery	Outpatients	Regional, rural and remote
Cairns & Hinterland HHS	<p>Interviewee location: Cairns</p> <p>Method: Real-time, clinic-based VC.</p> <p>Model: AHP / other practitioners (nurse, physiotherapist, dietitian, pharmacist, psychologist) ⇔ client</p> <p>Phase: Post-implementation (one-off trial)</p> <p>Details: Trial implementation on medical officer request for 2 clients, but further development of model is outside the capacity of service at this time.</p>	Cardiac rehabilitation (education component of CR program)	Outpatients	Remote

Appendix B: Clinical tasks and functions delivered using telehealth

This appendix comprises aggregated data on clinical tasks and functions drawn from the key informant interviews, survey and literature review, sorted by profession and clinical practice area. Information from interviews highlighted that clinical tasks are often adapted for delivery by telehealth. Adaptations to tasks are discussed in Section 2.2.2 of the report. It was beyond the scope of this project to gain detailed information on the method of adaptation of each task listed below for all relevant sites. However, the list should be read with an understanding that the scope of the task delivered via telehealth may differ from face-to-face delivery. Importantly, the information in this appendix cannot be used to indicate the universal appropriateness of the clinical tasks and functions for delivery by telehealth. The service model (e.g. the presence of clinicians at both sites, or an AHA / nurse / health worker at the recipient site, use of task-specific peripheral devices or other technological adaptations, patient selection decision etc.) will influence the capacity to implement these tasks and functions safely and effectively in a particular team. Where possible, information on the client-end support was captured and is recorded in the lists below using the superscript notation:

- a) recipient site has AHP of the same profession present
- b) recipient site has health practitioner of a different profession present (e.g. other AHP, nurse)
- c) recipient site has AHA (or other support worker) present
- d) no clinical worker is present at recipient site for the telehealth session

In some cases information on recipient site support was not captured or the model was still in development. In this case, no superscript notes are included.

Audiology

- Cochlear implant: mapping process with adjustments to implant (if required)^c

Dietetics & nutrition

- Assessment: Diet history and nutrition intake^d, child growth and failure to thrive^d
- Clinical measurements and anthropometrics - height^{b/c}, weight^{b/c}, BMI, blood pressure, blood glucose level and HbA1c (taken by recipient site worker and provided to dietitian in VC consult)^{b/c}
- Malnutrition assessment – MST^d, SGA (modified to omit physical assessment section or augment with photographs and / or observation by trained clinician at recipient site)^{b/c/d}
- Outpatient group education sessions (healthy eating, chronic disease prevention and diet-disease relationship)^d
- Outpatient dietetics session^d
- Diabetes education^d

- Individual or group education session – faltering child ^d
- Oral nutrition supplement prescription ^d
- High protein / high energy diet prescription and education ^d

Medical Imaging

Sonography (sonography trainee supervision):

- Abdominal ultrasound (US) ^a
- Renal US ^a
- Basic vascular (carotids, DVT) ^a
- Obstetric US (dating, 20 week morphology, 3rd trimester growth and wellbeing scans) ^a

Breast sonography:

- Breast diagnostic sonography examination with off-site radiologist review ⁱ

Radiography:

- Support for X-ray operators provided by radiographer: request form interpretation and imaging plan, positioning for X-ray, adjusting exposure and reviewing images.

Occupational Therapy

Function and ADL:

- Home-based assessment or review – functional mobility, transfers, personal and domestic ADL tasks, home environment ^c
- Home-based therapy review and progression – functional retraining (e.g. post-stroke) ^{c/d}
- Prescription and review of assistive technology

Paediatrics:

- Education and review of management plans for parents e.g. toileting concerns (enuresis, encopresis) ^d, sleep hygiene.
- Post-discharge support, and therapy program review and progression, advice and reassurance for parents / family (shared care model for complex cases) ^a
- Seating review (e.g. wheelchair tolerance) and recommendations ^{a/b}

Burns and plastics:

- Scar and oedema assessment – observation via VC, augmented by store and forward of high quality photographic images, palpation by local clinician ^{b/c}
- Assessment of range of movement and functional movements/tasks – observation via VC, augmented by palpation, goniometry, manual muscle testing and other physical measurements by local clinician ^{a/b/c/d}
- Review of splint or cast position, fit, comfort and wear ^{a/b/c/d}

ⁱ Part of an evaluated trial. Approval pending for continued use of telehealth for offsite radiology.

- Return to work advice ^{a / b / d}
- Patient and family education re free flaps, skin grafts, scars ^{a / b / d}
- Compression management including review of garment fit and comfort, and education for patient and family ^{a / b}

For hands and lymphoedema, see “Multi-professional / nonprofession specific” below

Pharmacy

- Medication history taking ^d
- Chart reconciliations and action plans ^b
- Medication counselling (inpatient or outpatient) e.g. asthma inhaler technique or warfarin education ^d
- Pre-discharge and inpatient medication reviews ^{b / c}

Physiotherapy

General musculoskeletal and orthopaedics:

- Physiotherapy orthopaedics pre-operative assessment ^c
- Outpatients e.g. (re)assessment, exercise review / progression ^c
- Complex outpatient musculoskeletal / orthopaedics (expert clinical review) ^a
- Assessment of range of movement, strength and functional tasks – observation via VC, augmented by palpation, goniometry, manual muscle testing and other physical measurements by local clinician ^{a / b / c / d}

Women's health:

- Individual client session including post-natal reviews (e.g. posture, baby handling)^d
- Group ante-natal education sessions ^c

Chronic respiratory (COAD, CF):

- Comprehensive multi-disciplinary case review and management planning ^d
- Self-management education and coaching ^d

Mobility and physical function:

- Home-based review – mobility, transfers, environment ^c
- Group balance and mobility class ^c
- Outpatient review clinic e.g. mobility review, progress therapy program ^c

Neurological (paediatrics and adults):

- Gait assessment and review including ankle foot orthosis (AFO) review ^{a / c}
- Positioning and functional tasks review and recommendations ^{a / b / c}
- Seating review and recommendations ^a

For hands and lymphoedema, see “Multi-professional / nonprofession specific” below

Podiatry

- High risk foot assessment (with / without photographs) ^{b/c/d}
- Paediatric foot assessment (with / without photographs) ^{b/c/d}
- Biomechanical assessment (lower limb including gait and functional tasks) ^{b/c/d}
- Wound and ulcer review / assessment (real-time VC generally augmented by store and forward of high quality photographic images) ^{b/c}

Psychology

Health Psychology (e.g. chronic pain, Hepatitis C treatment program):

- Assessment and self-management recommendations ^d
- Assess and monitor mood, depressive symptoms and suicide risk ^d
- Provide psycho-education ^d

Mental health:

- Diary review ^d
- Monitoring mood, depressive symptoms and suicide risk ^d

Social Work

- Social work assessment or review ^d including complex cases/crisis (shared care) ^a
- Counselling and support techniques ^d
- Stress management ^d
- Tribunal hearings by VC

Speech Pathology

Swallowing:

- Assessment (varying complexity in different models) - adult dysphagia ^{a/b/c}
- Assessment - paediatric feeding ^a
- Review and recommendation process e.g. trial finger foods ^{a/c}
- Therapy prescription, planning and review (complex cases) ^{a/c/d}

Speech and communication:

- Paediatric assessment and therapy: fluency, communication and developmental language development ^{a/c/d} (e.g. implementing Lidcombe program for preschool-aged children and Camperdown treatment program for adults)
- Voice assessment and therapy ^{a/d}
- Adults assessment and therapy: aphasia, dysarthria therapy ^{a/c/d}
- Standardised language assessments - Western Aphasia Battery, PALP, Boston Naming Test ^{c/d}
- Standardised speech assessments - parts of the Frenchay Dysarthria Assessment (omitting the oral examination sections) ^{c/d}

- Language and speech based tasks - word association tasks, naming tasks (uses stimulus materials projected on the VC screen) ^{c/d}
- Home therapy programs – prescription and review (emails written program to recipient site administration officer or AHP to print and provide to client / parents) ^d
- “Troubleshoot” augmentative and alternative communication (AAC) devices ^a

Specific clinical groups:

- Head and neck cancer:
 - Pre-treatment (surgery / radiation therapy / chemotherapy) - treatment readiness / work-up, counselling and information provision ^a
 - Post-treatment - review, assessment and management of swallowing and communication disorders, collaborative management (shared care model) of tissue breakdown, oral cares education ^a
 - Trismus assessment and management ^a
 - Multidisciplinary team (MDT) input as required (e.g. Dietitian) ^a
- Laryngectomy
 - Pre-operative counselling
 - Voice prosthesis (VP) management (complex issues, problem solving with local speech pathologist e.g. determine appropriate VP for client, SP intervention planning following VP removal, management of leakage) ^a
 - Electrolarynx - training and review ^a
 - Assessment and management of swallowing difficulties ^a
 - MDT input as required (e.g. ENT specialist, Dietitian) ^a
 - Stoma and respiratory care - assessment / review and collaborative management ^a

Multi-professional / non-discipline specific

Hand therapy (physiotherapy or occupation therapy depending on setting / staffing):

- Scar and oedema observation with palpation and measurement (tape) done by local clinician ^{a/b}
- Assessment of range of movement and functional tasks ^{a/b/c/d}
- Splint prescription, fabrication, fit and trial ^a
- Compression management ^a
- Review of splint position, fit, comfort and wear ^{a/b/c/d}
- Exercise progression ^{a/b/c/d}
- Implementation of post-tendon repair clinical pathway –progress therapy program via VC consultation ^{b/c}
- Post-orthopaedic surgery review e.g. X-ray check for position and planning for removal of K-wires (care coordination / planning in relation to return travel to tertiary hospital). [Note: extended scope of practice model with AHP/nursing-lead review of uncomplicated post-surgical clients (e.g. ORIF) which is extended to telehealth delivery for clients who returning to a remote areas after discharge] ^b

Chronic conditions management:

- Education sessions of cardiac rehabilitation program ^d
- MDT review or care planning (e.g. cystic fibrosis, cerebral palsy) ^d

Chronic Pain:

- MDT review (subjective) and care planning ^d and shared care model with local clinicians (providing expert input) ^a
- Self-management strategies ^d

Lymphoedema (physiotherapy or occupation therapy depending on setting / staffing):

- Lymphoedema assessment / measurement ^a
- Selection, fitting of compressions garment ^a
- Review of exercise program and self-management strategies ^{a/c/d}

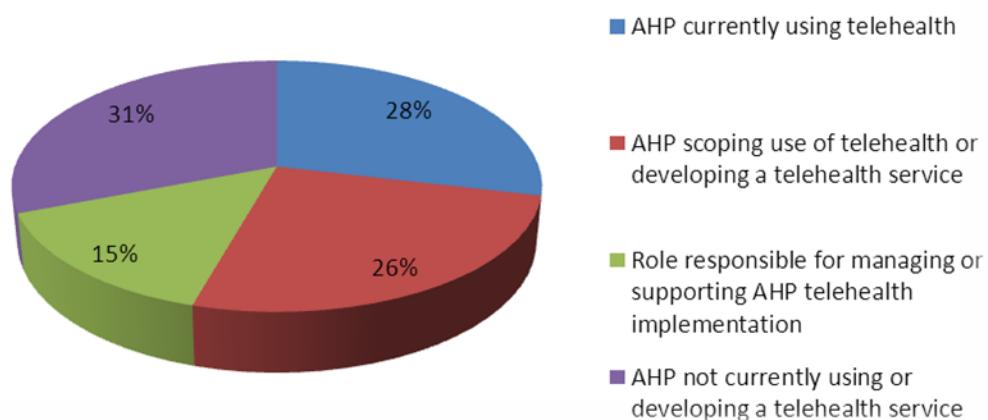
Note: most examples of lymphoedema services provided via telehealth were participating in the statewide service redesign trial related to the *Guideline: for compression garments for adults with malignancy related lymphoedema: Eligibility, supply and costing* (Department of Health, 2013). Information on the redesign trial is available at <http://qheps.health.qld.gov.au/ahwac/content/compression-garm.htm>.

Appendix C: Summary of survey outputs

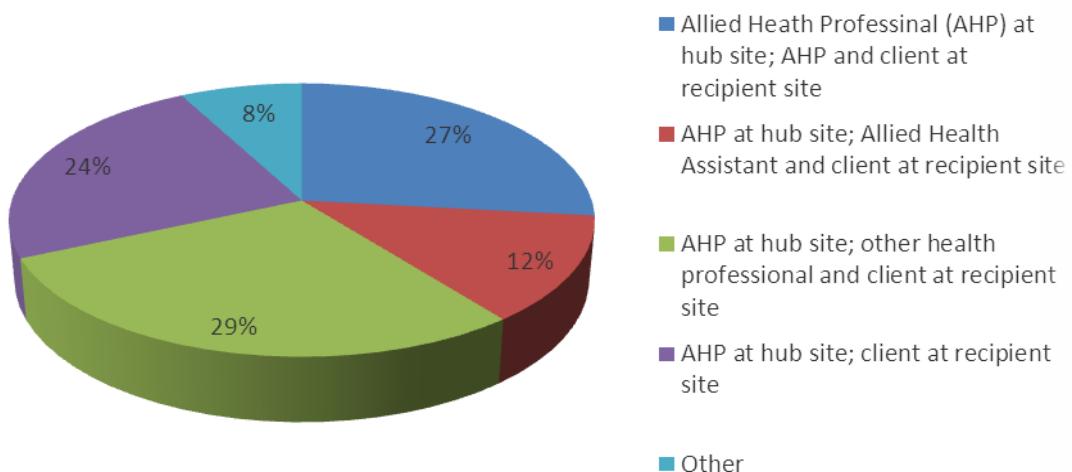
Survey outputs are shown in the series of charts in this appendix. The total number of survey respondents was 128. The survey design included a limited number of mandatory questions (e.g. organisation, profession), a number of optional questions and a group of questions related to the telehealth model implemented by the respondent which were only accessible by those indicating current use or development of a telehealth service model. Respondent numbers are indicated for each question in the chart title.

Telehealth services in development or implemented

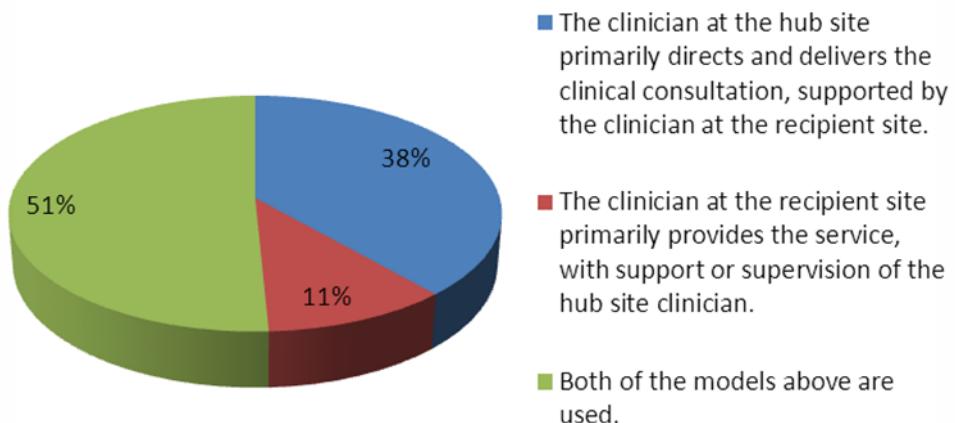
Respondents' involvement in telehealth
(n=128)



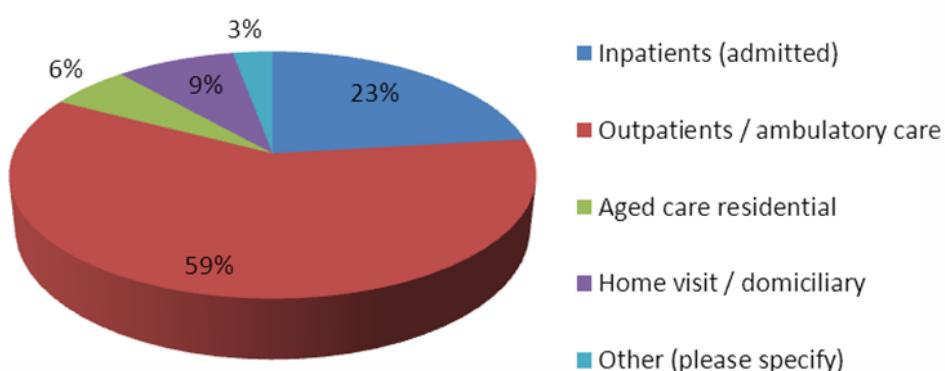
**Model/s of telehealth respondents
are developing or implementing (n=79)**



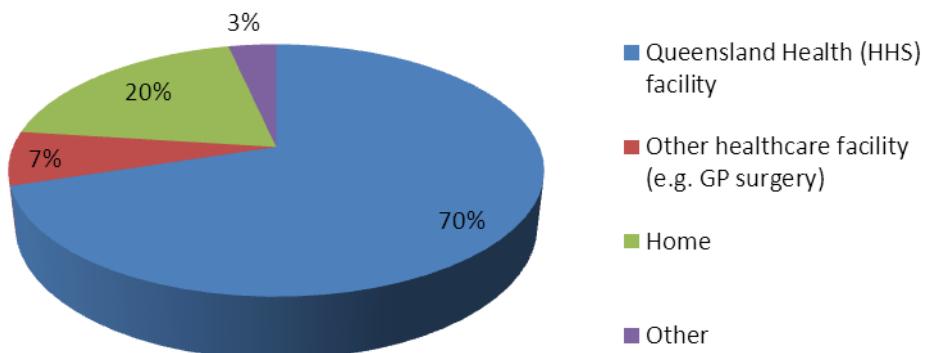
Structure of dual clinician model (n=65)



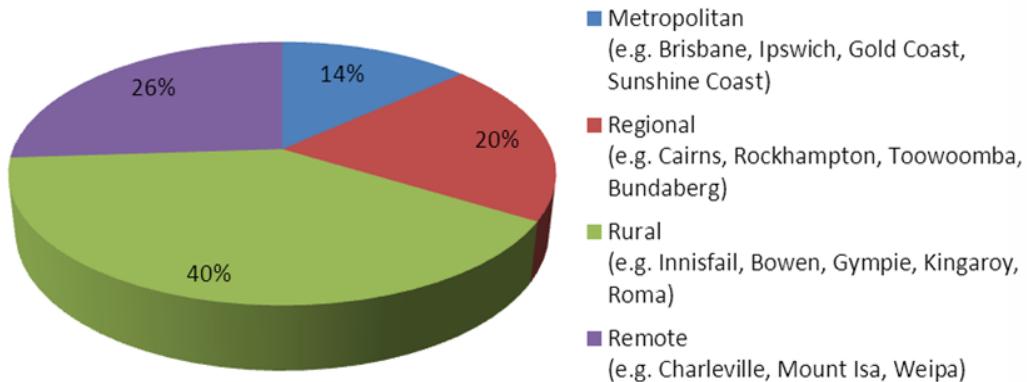
Client group/s accessing the telehealth service (n=69)



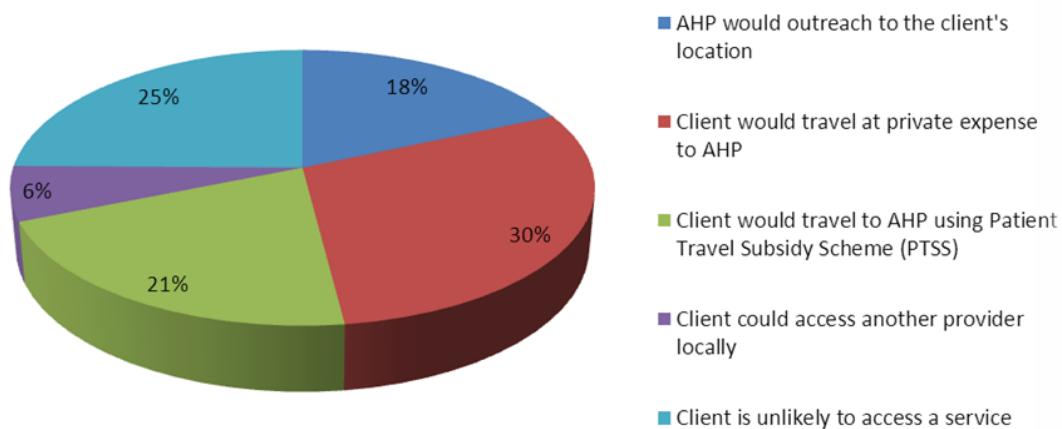
Where clients access the telehealth service (n=69)



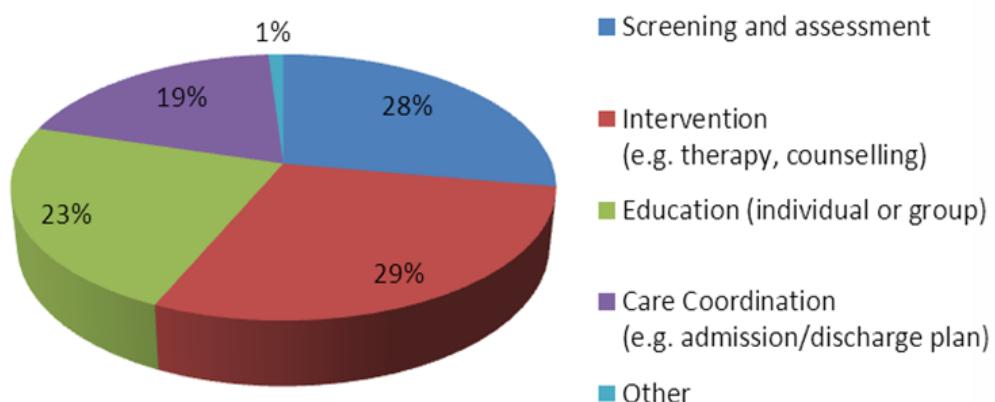
Telehealth service clients by location of residence (n=70)



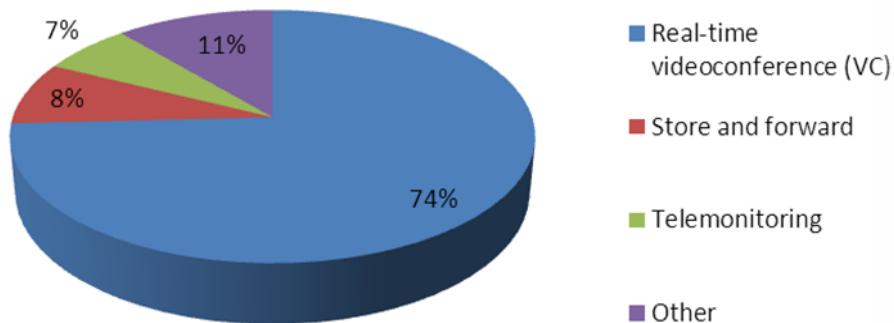
If telehealth was not available, how would clients access the AHP service? (n=67)



Clinical functions provided to clients using telehealth (n=68)

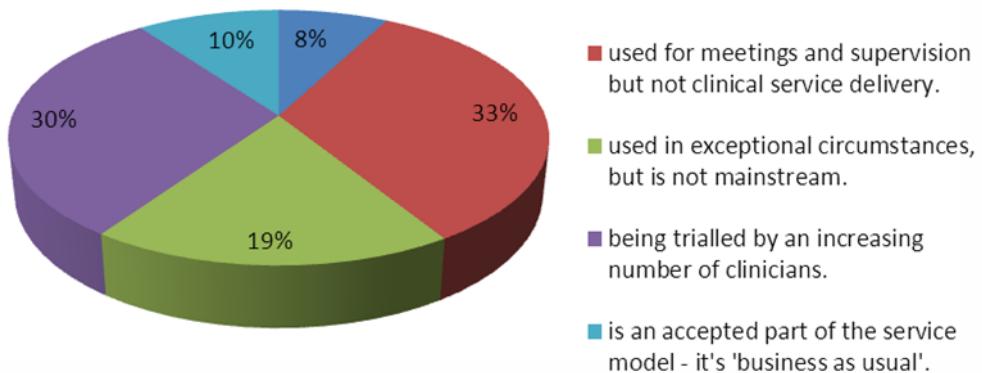


Forms of telehealth used (n=65)



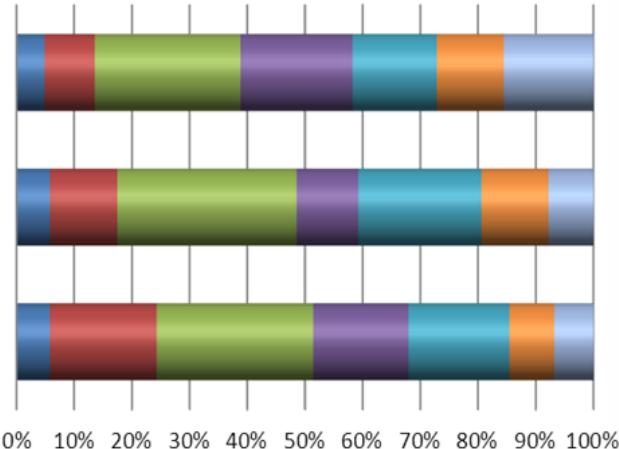
Views on telehealth

In my team / work unit telehealth is... (n=104)



Administrative and operational aspects of telehealth (n=103)

Administrative processes for scheduling and conducting telehealth appointments are not burdensome for clinical staff.

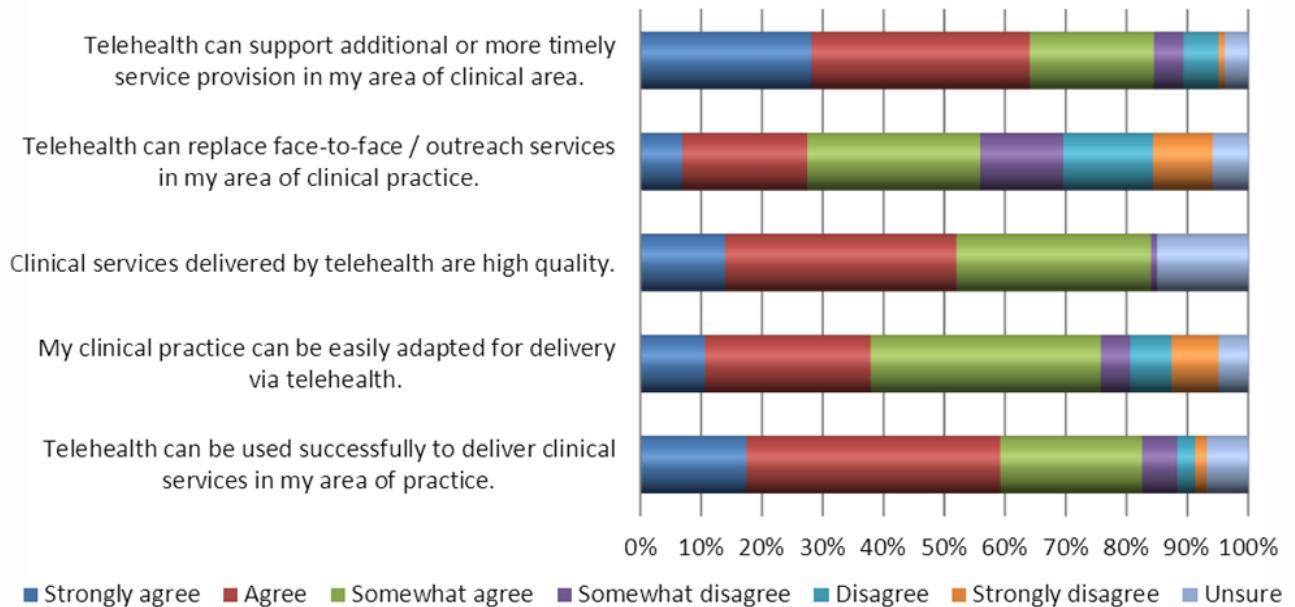


My team has all the information, resources and support we need to develop and implement a telehealth service.

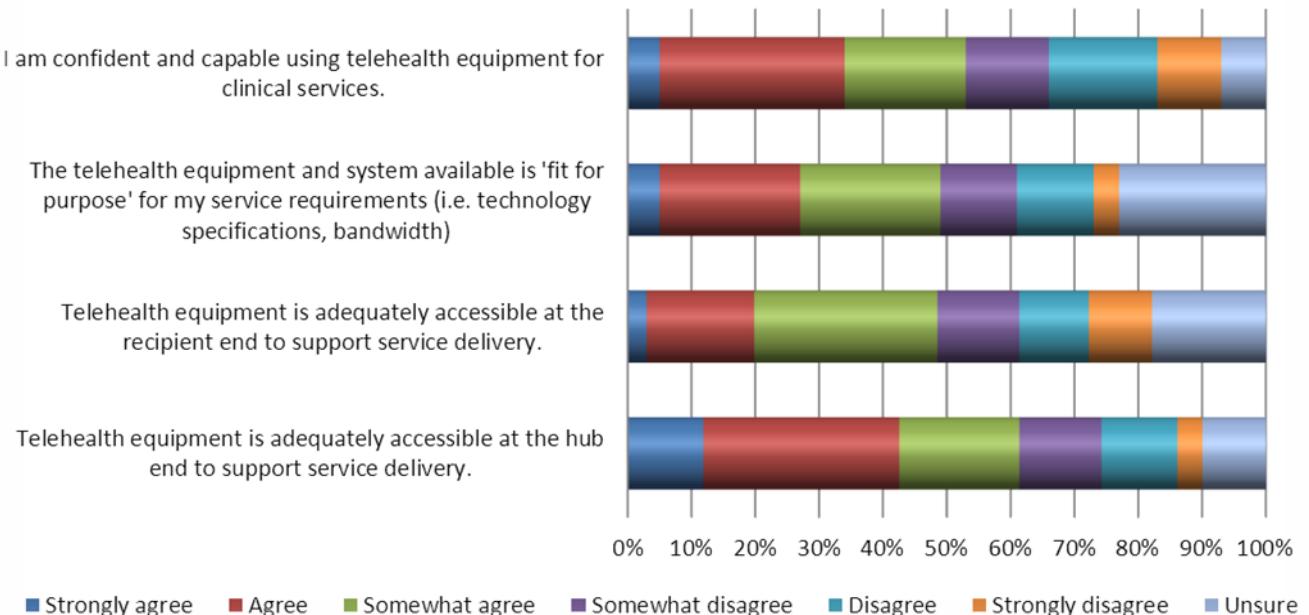
Telehealth services are not difficult to organise in my team/organisation.

■ Strongly agree ■ Agree ■ Somewhat agree ■ Somewhat disagree ■ Disagree ■ Strongly disagree ■ Unsure

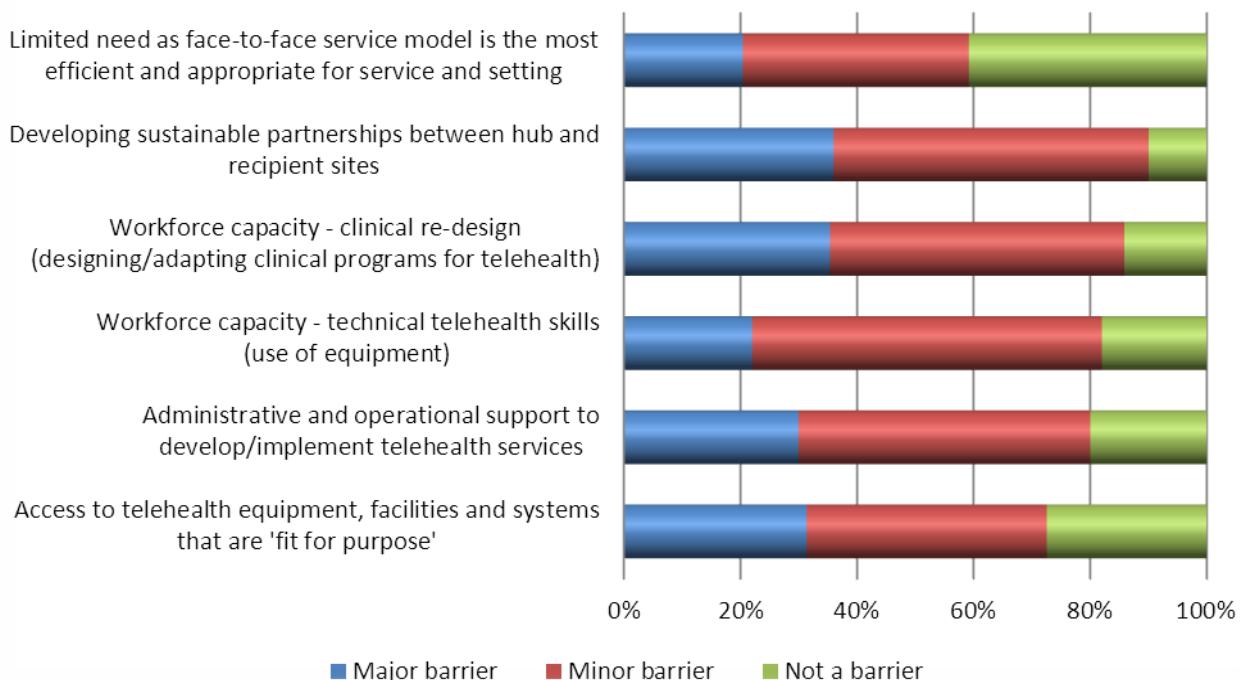
Applicability of telehealth to respondent's clinical services (n=103)



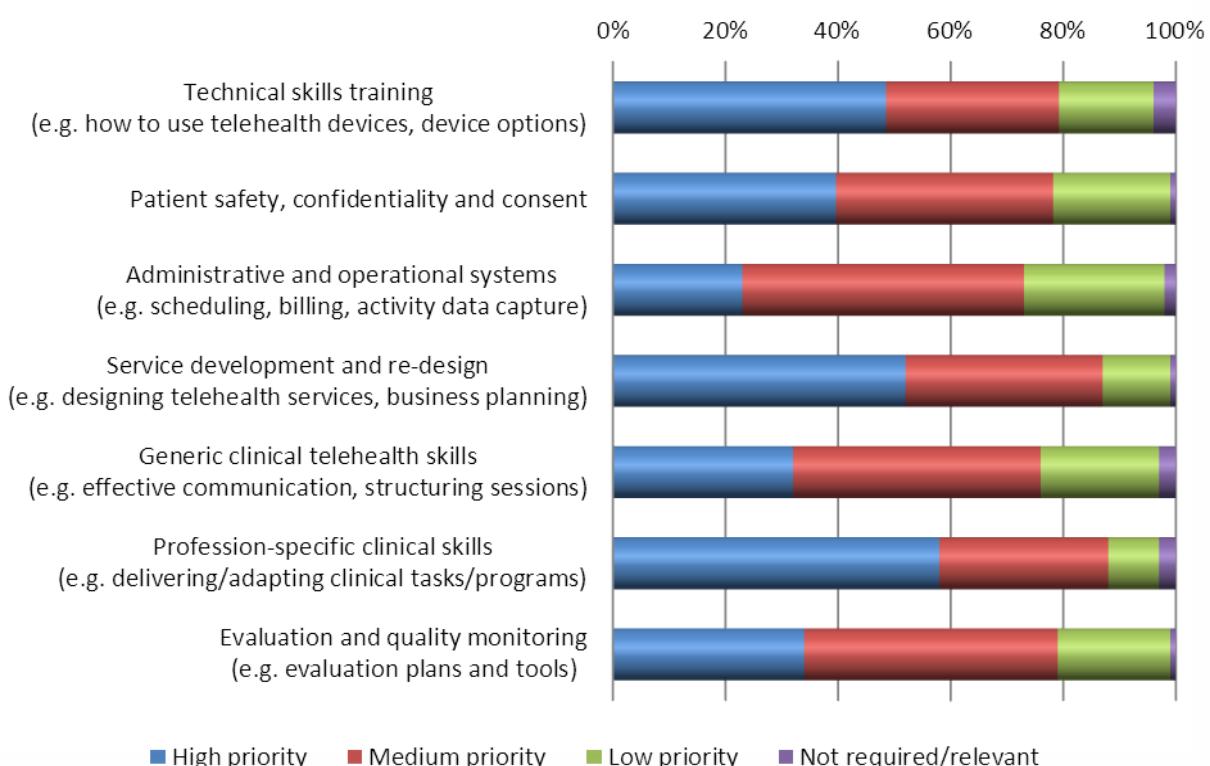
Access and use of telehealth equipment (n=101)



Major barriers to telehealth implementation / expansion (n=102)



Priorities for training and support resources (n=101)



Appendix D: Summary of locally-developed allied health telehealth resources

The scoping project requested information from interviewees and survey participants regarding resources developed or adapted to support the implementation of allied health telehealth services. Where possible, copies of the resources were collected by the project team.

A summary of resources identified is provided below. Most resources available through the CARU Telehealth Support Unit or other websites of external organisations are not listed here. Standard statewide telehealth resources and guiding documents are available on the CARU website at <http://www.health.qld.gov.au/telehealth/html/resources.asp>. The purpose of identifying locally developed resources in this project was to:

- indicate the system-level gaps in required resources (necessitating local development), and
- provide a platform for subsequent resource development in a later stage of the allied health telehealth capacity building initiative.

Table 3: Locally-developed allied health resources identified in project

Resource	Source	Details
Patient resources		
Patient consent to participate in telehealth	Mater Health Services	
Instructions for telehealth	Wide Bay HHS	Set-up / use of Cisco Jabber
Awareness raising / promotion of telehealth service option for patients	Cairns & Hinterland HHS (dietetics)	Poster used in remote clinics
	Mackay HHS (dietetics)	Flyer for rural / remote clinics
Service resources		
Work instruction (WI) for allied health use of telehealth for clinical purposes	Mater Health Services	Implemented April 2014
	Mackay HHS (speech pathology)	WI in development
	Mackay HHS (dietetics)	'Work unit guideline' for staff orientation to role
	Central Qld HHS (pharmacy)	Outpatient service only in WI
	Wide Bay HHS (allied health)	In development
	Wide Bay HHS (medical)	Medical clinic outpatients (from CARU)

Resource	Source	Details
Workflow guideline	Metro North HHS / statewide (sonography)	Process for arranging remote supervision for US examination
Business plan for telehealth service	Darling Downs HHS	Business plan
	Sunshine Coast HHS	Telehealth clinic initiation
	Breast sonography	Operating guidelines
Record of negotiated roles and responsibilities between hub and recipient sites	Sunshine Coast HHS	Telehealth service development resource developed by Telehealth Coordinator
Evaluation plan/protocols and tools	Cairns & Hinterland HHS (dietetics)	Patient satisfaction survey / feedback on telehealth session
	Metro North HHS / UQ (speech pathology)	Research protocol, staff satisfaction survey, patient & carer satisfaction
	Metro North HHS (various)	Patient satisfaction
	Darling Downs HHS	Research protocol
	Metro North HHS / statewide (sonography)	Staff satisfaction, revenue, time in motion
	Royal Perth Hospital (WA)	Patient satisfaction survey
Telehealth activity data / billing data capture	Sunshine Coast HHS	Telehealth data capture tool and procedure (not specific to AH)
	Darling Downs HS	iPad activity log
Referral form / booking form or process for telehealth consultation with "clinical expert" AHP	Metro North HHS / statewide (sonography)	Sonography supervised examination
	Metro North HHS / UQ (speech pathology)	Speech Pathology review with expert clinician
	Sunshine Coast HHS	Telehealth booking process

Resource	Source	Details
Education and training resources		
Local education resource - Technical skills / use of technology / operational	Darling Downs HHS	Guide to use iPads, guide to install and use Cisco Jabber
	Mater Health Services	Inservice - telehealth overview
	Wide Bay HHS	Inservice (in development) – orientation to telehealth for allied health (also includes some clinical content), use of iPads
Local education resource - Clinical uses of telehealth	Metro North HHS / UQ (speech pathology)	Telehealth training for dual clinician telehealth model (linked to research study / protocol)
	Metro South HHS / UQ (speech pathology)	Telehealth for speech pathology (presentation)
Clinical resources		
Assessment tools / forms / protocols for clinical tasks and functions delivered by telehealth	Breast Screen QLD	Minor amendment to standard form
	Wide Bay HHS (physiotherapy)	Physiotherapy falls/balance session evaluation (adapted existing tool)
	Country Health South Australia (speech pathology)	Protocol for dysphagia assessment (in development)
	Townsville HHS (OT)	Draft clinical pathway (paediatric rehab)
Clinical resource kits supporting telehealth session	The Centre for Cerebral Palsy (WA)	Basic therapy equipment kit / checklist for remote clinics
Profession-specific guides for use of telehealth (e.g. patient selection, precautions, applications)	Darling Downs HHS	Short overview of telehealth indications/ considerations for 6 allied health professions
	WACHS	Profession-specific guides (developed mid 2000s)

Appendix E: Summary of telehealth training programs and resources

This appendix comprises summary information on telehealth training programs or self-development support resources identified in the project as potentially relevant for allied health.

The search strategy to identify training programs was:

- web search using Google® search engine and key terms “telehealth”, “allied health”, “training”, “education” and snowballing strategy using web links from identified sites, and
- referral from interviewees, steering group members or other key contacts.

Considering the method of identification, the list cannot be viewed as a comprehensive scan of all current telehealth training programs or resources, but rather a snapshot of programs already undertaken and accessible to allied health practitioners in Queensland HSSs.

Table 4: Telehealth training programs / resources identified in project

Training provider	Details	Mode of delivery	Target audience
Australian College of Rural and Remote Medicine (ACRRM)	Content areas: Technology set up and reliability, patient information security, consent, patient selection for telehealth consultation, billing (MBS schedule), scheduling, evaluation Cost: Free to ACRRM members	Online (printable) handbook	ACRRM members (rural and remote medical practitioners)
LifeTec	Content areas: Introduction to technology set up and reliability including internet speed testing, optimising video and audio quality. Focus on Skype and Face Time examples as well as the telehealth consult environment, camera placement, client engagement and etiquette. Overview of risk management procedures and evaluation. Cost: Approximately \$200	Face to face full day training program	QLD Health and NGOs. Suitable for allied health, nursing, medical, health assistants and administration staff.
CRANplus	Content areas: Communication, troubleshooting and technical tips, telehealth services examples / information Cost: Free (registration required to access)	Online learning program, online guidelines and standards document.	Nurses

Training provider	Details	Mode of delivery	Target audience
Royal Australian College of General Practitioners (RACGP)	Content areas: Range of resources, templates and guiding document Cost: Free	Online	Medical practitioners
American Telemedicine Association (ATA)	Content areas: Service redesign/development, technology, national / large scale strategies, business modelling, care coordination, general telehealth skills such as communication, clinical topics such as chronic disease management, chronic pain, workplace injury management. Cost: Free programs are accessible to ATA members only. Fee-based programs \$US15 - \$US199.	Primarily online / flexible (e.g. presentation recordings, courses)	Medical practitioners / some inter-professional content
National Aboriginal Community Controlled Health Organisations (NACCHO)	Content areas: Developing a telehealth service, consent, patient information, MBS / billing and business modelling, evaluation, summary of research (primary care and specialist outpatients). Cost: Free.	Online – series of short fact sheets.	Medical practitioners primarily but some content relevant to other primary care providers.
Unicare e-health	Content areas: Service redesign, history in Australia, general clinical considerations, medical specialty specific use of telehealth, technical considerations and tips, administration, booking and billing. Cost: Free.	Online – e-book and website resources.	Medical practitioners primarily but some content relevant to other primary care providers.
Australian Nursing and Midwifery Federation	Content areas: Applications of telehealth, patient selection, setup for VC consultations, general VC consultation information, telehealth technology and technical considerations, administration, booking and billing. Cost: Free (registration required to access) Length: full program 6.5 hours but divided into smaller modules	Online CPD program comprising tutorials with self-assessment quizzes	Nurses, nurse practitioners, midwives, but with relevance to other primary healthcare providers

Training provider	Details	Mode of delivery	Target audience
Flinders University	<p>Content areas: Clinical applications of telehealth in rehabilitation, how to set up a iPad in patient's home for rehabilitation, practical examples of delivering clinical tasks using iPad for in-home rehab.</p> <p>Cost: Free to access short video presentations (YouTube). Linked to commercial tele-rehabilitation app called TRex</p>	Online short training video vignettes	Rehabilitation
Southern Cross University	<p>Content areas: Models for servicing rural and remote communities, with a focus on clinical uses of telehealth as part of a broader service strategy.</p> <p>Cost: Fee paying students</p>	Post graduate coursework unit (no current offering)	Rural and remote allied health practitioners
University of Queensland, Centre for Online Health	<p>Content areas: Post-graduate and professional development programs in e-health.</p> <p>Cost: Fee paying students / participants for most programs.</p> <p>Promoting Australian Clinical Telehealth is free (registration required)</p>	Post graduate coursework and professional development programs	e-health topics including clinical telehealth

Appendix F: Summary of telehealth online resources

This appendix comprises resources related to use of telehealth by allied health professions. A comprehensive literature review for all allied health professions was beyond the scope of this project. The resources listed below may provide useful further reading for allied health professionals developing telehealth models or for use in business/concept plans. The search strategy is described in [Appendix G](#).

Table 5: Online resources / repositories identified in project

Publisher	Ref	Title	Details
Services for Australian Rural and Remote Allied health (SARRAH)	[3]	Position paper: Telehealth and Allied Health	Barriers, enablers, and benefits of telehealth
Primary Health Care Research and Information Service (PHCRIS)	[4]	PHCRIS Policy Issue Review: Allied health video consultation services	Overview of telehealth use, funding, and clinical evidence for 10 allied health and a number of other professions.
Primary Health Care Research and Information Service (PHCRIS)	[5]	PHCRIS Policy Issue Review: Telehealth in primary health care settings within Australia and internationally	Effectiveness and cost effectiveness, opportunities, infrastructure, policy recommendations in relation to telehealth use in primary healthcare.
Australian National Consultative Committee on Electronic Health	[6]	A national telehealth strategy for Australia	Policy and strategic overview of telehealth use in Australia including system enablers and barriers.
Australasian Telehealth Society	[7]	Towards a National Strategy for Telehealth in Australia 2013-2018	Strategic plan for telehealth use in Australia.
Australasian Telehealth Society	[8]	Australian Telehealth Repository	List of publications on Telehealth projects and activities in Australia (mostly historical, some allied health)
Unicare e-health	[9]	Evidence for telehealth	Evidence for telehealth organised by profession (e.g. physiotherapy) and clinical areas (e.g. diabetes, mental health), plus economic studies.

Publisher	Ref	Title	Details
Telehealth Research & Innovation Laboratory (THRIL) (University of Western Sydney)	[10]	Australian Telehealth Document Repository	Comprehensive searchable database of telehealth evidence and resources
Queensland Parliament. Health and Community Services Committee	[11]	Inquiry into telehealth services in Queensland	Overview of telehealth use in Queensland public health system and also interstate and overseas. Data on telehealth use by allied health professions and clinical areas. Brief information on some models of telehealth use by allied health. Evaluation outcomes.

Appendix G:

Project methods including limitations

Methods

Data collection

The preliminary model of telehealth capacity building was used to develop a basic framework for data collection (see [Table 6](#) below). Data was collected by desktop review, key informant interviews and an online survey.

(a) Desktop review

A search for telehealth policy documents, training programs and online resources was undertaken. The search focussed on, but was not limited to, clinical applications of telehealth relevant to allied health. The short term of the project precluded a more extensive review of published literature. In the desktop review, a number of telehealth bibliographies and repositories of evidence were identified [3, 5, 9, 10], so there was also limited need to replicate these resources through a more extensive literature review. The review used Google search engine and search terms “telehealth” and “allied health”. Information was also subsequently sourced through following web links.

(b) Key informant interviews

Interview form and structure: A semi-structured interview was developed by the project team, along with a data collection template to support consistency of interview approach between interviewers. The Cunningham Centre Project Officer and AHPOQ Principal Workforce Officer conducted the interviews. Most were by telephone or videoconference, with a small number completed face-to-face. Interviews ranged in duration between approximately 10 minutes to an hour, with the average being between 20 and 30 minutes. An overview document was provided to participants prior to interviews (see [Figure 1](#) below). Not all sections of the interview were relevant to all interviewees.

Recruitment: An invitation to contribute information to the scoping project was distributed to through existing email communication networks including:

- HHS allied health leaders, professional network chairs and similar QH statewide profession leadership roles, and telehealth coordinators,
- rural and remote allied health practitioners and team leaders, and
- other jurisdictions and sectors through the National Allied Health Advisory Committee (NAHAC), and Services for Australian Rural and Remote Allied Health (SARRAH) membership.

Interviewees were also asked to identify colleagues involved in telehealth services or other key contacts (snowballing recruitment strategy).

Informant feedback: Interviewees were provided with Appendix A, B, D and the acknowledgements section of the draft report by email and invited to review the document for errors or omissions. Interviewees had one month to provide feedback. Five responses were received requesting minor changes (e.g. unit

name, telehealth trial site location) or updates which were integrated into the final version of the report.

(c) Online survey

An online survey was developed by the project team using the objectives of the project and preliminary findings from the interviews. The online survey comprised primarily multiple choice questions with some short response questions. The survey was tested by two senior allied health professionals prior to finalisation and was approved by the Steering Group. The survey web link was distributed through Queensland Health allied health email groups including HHS allied health leaders, statewide profession group chairs and workforce development contacts.

Data synthesis and analysis

(a) Desktop review

Project team members independently sourced and reviewed key documents, training programs and online resources for relevance to the delivery of allied health clinical services. Outcomes were discussed between team members and summary information was collated for resources identified as relevant. Information in relation to key documents / resources was compiled and presented in [Appendix F](#), and for training programs in [Appendix E](#).

(b) Key informant interviews

The two interviewers independently compiled key findings from each interview into a summary data table. Basic descriptive data (model of telehealth and technology/equipment used, professions, locations) was recorded in a standard format. Other qualitative information (views on telehealth fitness for purpose, barriers and enablers, key learnings) were summarised and grouped into preliminary themes by each interviewee. Following individual analysis of own interview data for key themes, interviewers met to collaboratively discuss and refine themes by identifying commonalities and then testing developing themes by seeking exceptions in the data. Summary findings were generated from the analysis by the Principal Workforce Officer, AHPOQ, and reviewed by the Project Officer, Cunningham Centre.

(c) Online survey

Data was downloaded in MS Excel format from Survey Monkey®. Data from questions with categorical outputs (profession/workforce group, organisation of respondent) and ordinal outputs (e.g. ranking, Likert) were compiled into summary charts. Data from questions with short free text responses were aggregated. All survey outputs were reviewed by the two project team members and integrated into the development, review and testing of summary project findings (see above).

Limitations

This project was a modest exploratory exercise to support business planning for AHPOQ and the Cunningham Centre, and was completed within existing resourcing of both units and a short timeframe. Within these constraints, strategies were employed to try to maximise project rigour and the validity of outputs. However the project cannot

be viewed as an exhaustive study of telehealth use in allied health services. Key limitations of the project method are described below and should be considered when interpreting findings.

- Recruitment (selection and volunteer) bias

Interviews and the survey were subject to significant selection bias as potential participants needed to receive, open and respond to an email invitation. It is likely that this skewed respondents towards those with high interest in telehealth. This may have impacted the recording of barriers to use in particular. Despite the recruitment process used reasonable diversity of interviewees and survey respondents by geographical area, organisation and profession / workforce group was achieved (see Appendix J), though several gaps have been highlighted in section 3.2.

- Study instruments

Within the twelve-week project timeframe extensive testing of data collection instruments (interview and survey) was not possible. The extent to which the instruments influenced findings is not possible to quantify. Strategies employed to reduce measurement bias included survey pre-testing with a small number of reviewers (including the Steering Group) and use of a data collection framework to limit variation in interview collection between interviewers.

- Analysis

Data analysis and integration into project findings was undertaken by the Principal Workforce Officer, AHPOQ and Project Officer, Cunningham Centre. The combination of individual and collaborative qualitative data analysis by the two project team members supported the rigour of the analysis. Collaborative planning of interview structure and questions, and use of templates for data collection and analysis supported consistency and reliability between interviewers but some variability is likely. Informant feedback on draft outputs was used to support veracity of interview data in relation to descriptive information on interviewees' telehealth services. More extensive review and validation of findings was not possible in the project timeframe.

Table 6: Project data collection framework

Component of Telehealth Capacity Building model	Data collection framework		
	Key topics	Informational requirements	Data requirements
Workforce capacity	Workforce model: clinical tasks / programs feasible for telehealth-supported delivery	Clinical tasks (by profession) that are currently provided by telehealth, including how tasks are adapted for telehealth use	Task lists, clinical protocols / procedural documentation, assessment forms. Qualitative information from clinicians re adaptation of clinical tasks for telehealth, patient indications / exclusions.
		Programs / episodes of care supported by telehealth	Clinical protocols / procedural documentation Information on clinical programs / 'clinics' currently delivered or planned for telehealth - patient profile, clinical area, evaluation / output information, how telehealth is used / model of telehealth (e.g. AHP to AHP, AHP to AHA, AHP to client)
		Risk management	Methods, processes for managing risks and adverse events
	Workforce development	Clinical telehealth skills: Training, education, supervision and support requirements and resources to assist clinicians to adapt clinical practice for telehealth-supported service delivery.	Formal education and training programs (clinical skills / task / programs) Local / informal training programs and professional support strategies required and used Training needs and current gaps of users / potential users
		Operational (generic) telehealth skills e.g. use of equipment, generic telehealth communication skills	Training programs (internal / external) Education / support resources Training needs of users / potential users
	Workforce supporting systems	Use of workforce management / development resources for the purpose of embedding telehealth in models of care	Orientation manuals, recruitment information, PAD and team development plan (inservice schedule) - use to support telehealth implementation and sustainability

Component of Telehealth Capacity Building model	Data collection framework		
	Key topics	Informational requirements	Data requirements
Service redesign	Start-up, scoping, development phase of telehealth implementation	Resources and learnings related to establishing a AHP telehealth clinic or other telehealth-supported model	Business cases, project plans, scoping project reports Experiences and learnings of those involved in service development and trial
	Service models	Descriptive information, resources/documents, evaluation outcomes of current and planned services	Telehealth model, frequency, substitution/additional service (relationship to preceding service model)
			Process review - intake/triage for telehealth-delivered service, patient flow, operational arrangements at each site.
		Service agreements, service coordination	Resources and learnings related to coordinating telehealth services e.g. negotiating and establishing responsibilities across sites, supporting staff requirements at 'remote' site and procedural information for supporting staff
		Outputs / outcomes	Evaluation findings
	Service evaluation methods	Evaluation planning and reporting (tools and methods to evaluate telehealth-delivered services)	Evaluation plans and protocols Reporting tools and protocols
		Funding and business (tools and methods to evaluate telehealth-delivered services)	Evaluation tools - activity data collection processes using existing systems, local activity data collection forms Revenue-related data collection and reporting processes and tools KPI-related data collection and reporting processes and tools
		Safety and quality (tools and methods to evaluate telehealth-delivered services)	Evaluation tools, processes and learnings
		Client, staff, stakeholder satisfaction (tools and methods to evaluate telehealth-delivered services)	Evaluation tools and learnings (e.g. satisfaction surveys, focus group / interview questions)
	Patient / client resources	Information for service users	Appointment cards, service information sheets, generic and profession-specific telehealth resources for clients

Component of Telehealth Capacity Building model	Data collection framework		
	Key topics	Informational requirements	Data requirements
Infrastructure & access (low priority data collection)	Technology	Hardware, software used for allied health clinical application of telehealth	Equipment used for current telehealth services Product information for non-standard equipment
	Business matters	Procurement, funding, planning, administration of equipment	Experiences of procurement and management of equipment (if relevant), supports (contacts, resources) for procurement decisions.
	Access and local administration	Booking and scheduling; physical access (clinic rooms, telehealth availability).	Experiences of users Booking and scheduling processes / systems used

Figure 1: Interview overview provided to participants



Appendix H:

Project activities

#	Project objective	Activity	Target Group	Details	Responsible
1 CONCEPT & START-UP					
1.1		Concept Plan	AHLDCC	Approved by AHLDCC (AHPOQ and Cunningham Centre) 13/5/14	AHPOQ & CC
1.2		Outline paper	DAHPAC	Tabled at DAHPAC meeting for noting and feedback 22/9/14	AHPOQ
2 DATA COLLECTION STAGE					
2.1	1, 2	Informant identification, information request (internal)	HHS staff (Telehealth Coordinators, AHPs)	Email request distributed by AHPOQ, Cunningham Centre and CARU 2/10/14.	AHPOQ (CC & CARU support distribution)
2.2	1, 2	Informant identification, information request (external)	NAHAC, SARRAH	AHPOQ send email invitation to NAHAC and SARRAH requesting distribution through networks 2/10/14.	AHPOQ
2.3	1, 2	Desktop review	N/A	Desktop review of published and grey literature	AHPOQ, CC (& support from CARU)
2.4	1, 2	Key informant interviews	HHS staff	Semi-structured interviews with key contacts. Interviews conducted between 3/10/14 and 28/11/14.	AHPOQ & CC
2.5	1, 2	Online survey	HHS staff	Online survey released to HHS allied health managers, clinicians, educators and telehealth contacts. Survey open 30/10/14 to 17/11/14.	AHPOQ & CC
3 DATA SYNTHESIS & ANALYSIS STAGE					
3.1	3	Synthesis/analysis of data	N/A	See Appendix G .	AHPOQ & CC

4 PROJECT GOVERNANCE					
4.1		Steering group formed		Steering group formed & TOR approved by sponsors 26/9/14	AHPOQ & CC
4.2		Steering group - meetings		Steering group meetings - 26/9/14, 6/11/14, 11/12/14	AHPOQ & CC
4.3		Project Plan		Approved by steering group & sponsors 22/9/14	AHPOQ & CC
4.4	3	Project Completion Report		Submitted to Steering Group 11/12/14	AHPOQ & CC

NOTES

1 Objectives of the Scoping Phase are:

1. Needs/barriers and enablers appraisal for allied health implementation of telehealth
2. Map needs to existing internal (Qld Health) and external resources/tools and training
3. Generate summary findings to support development of an allied health telehealth capacity building plan for consultation with stakeholders

2 Abbreviations

CC	Cunningham Centre (Darling Downs HHS)
AHPOQ	Allied Health Professions' Office of QLD (Department of Health)
CARU	Clinical Access and Redesign Unit
HHS	Hospital & Health Service
SARRAH	Services for Australia Rural & Remote Allied Health
NAHAC	National Allied Health Advisory Committee
DAHPAC	Directors of Allied Health Professions Advisory Committee
AHLDCC	Allied Health Learning & Development Coordination Committee

Appendix I:

Steering Group Terms of Reference

Purpose

Provide oversight, strategic advice and support for the scoping phase of the telehealth capacity building project, including

Support project sponsors' review of the outcomes and recommendations for further work.

Membership

Allied Health Professions Office of Qld	Chief Allied Health Officer Principal Workforce Officer
Darling Downs HHS - Cunningham Centre	Executive Director Allied Health Principal Program Coordinator Project Officer
Statewide Rural & Remote Clinical Network	Allied Health member
CARU (Telehealth Support)	Principal Project Officer
HHS Allied Health leader	Allied Health Team Leader, WBHHS

Chair: either the DDHHS or AHPOQ sponsor, by mutual agreement at each meeting.

Governance

The steering group is jointly sponsored by the Chief Allied Health Officer, AHPOQ and Executive Director of Allied Health, Darling Downs HHS.

Operational arrangements

- The steering group will meet approximately 6 weekly during the project (Sept – Dec 2014) and to review project outcomes and recommendations (early 2015).
- Meetings will be via teleconference / videoconference.
- Meeting agenda and minutes / action list to be compiled by AHPOQ Principal Workforce Officer +/- Cunningham Centre Project Officer. Agenda will be sent 5 working days before the meeting and minutes distributed within 5 working days of the meeting.
- Papers may be electronically circulated out-of-session by the Chair for noting or decision.
- Members may provide a suitably briefed proxy for meetings if unable to attend.

Endorsement

26 / 09 / 2014

Annette Scott
Executive Director Allied Health, DDHHS

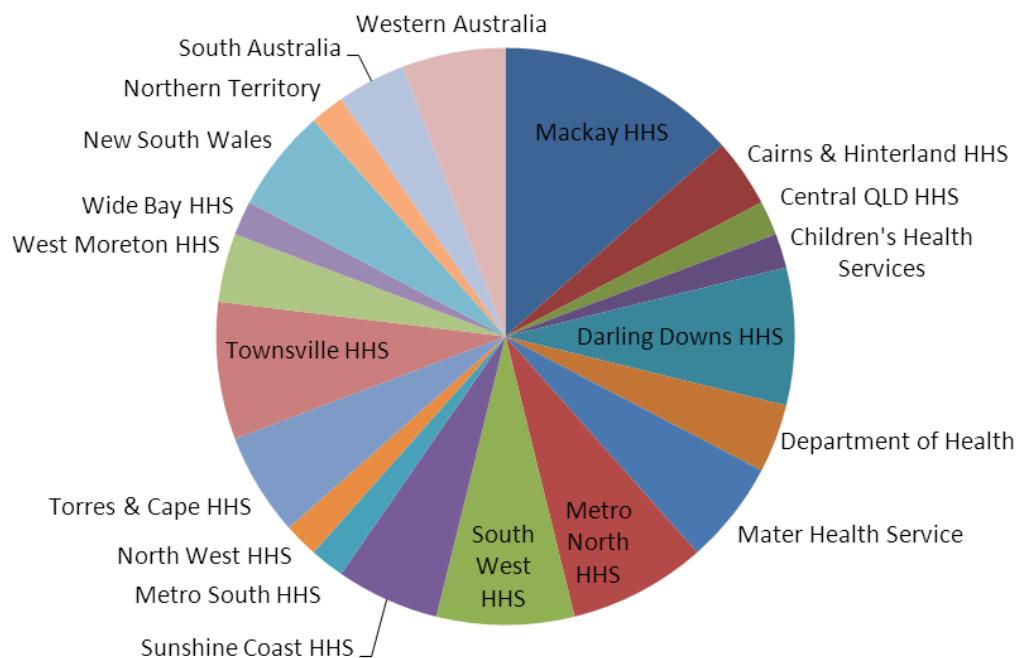
26 / 09 / 2014

Julie Hulcombe
Chief Allied Health Officer, AHPOQ

Appendix J: Informants – interview and survey

Interviews

Interviewees by organisation / jurisdiction (n=52)

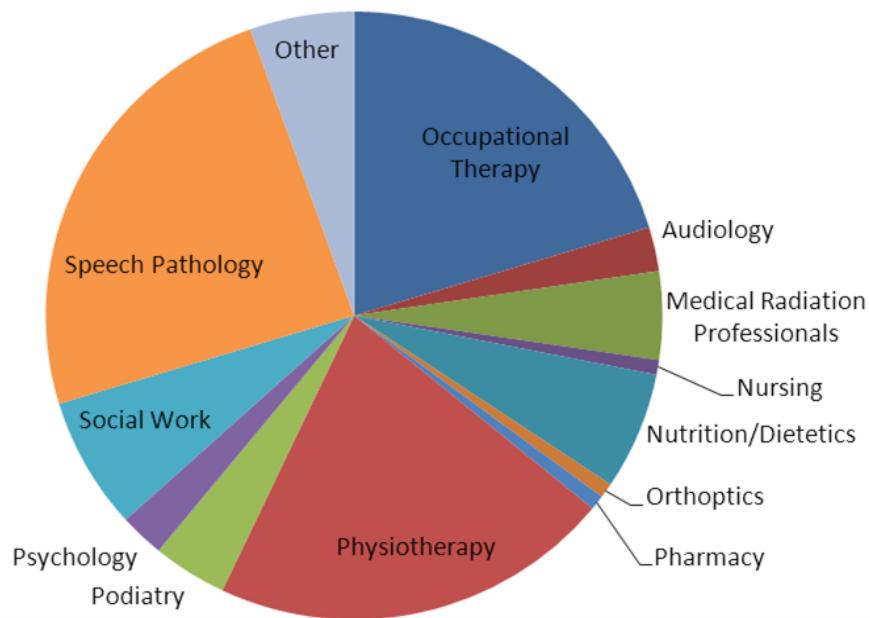


Interviewees by profession / role (n=52)

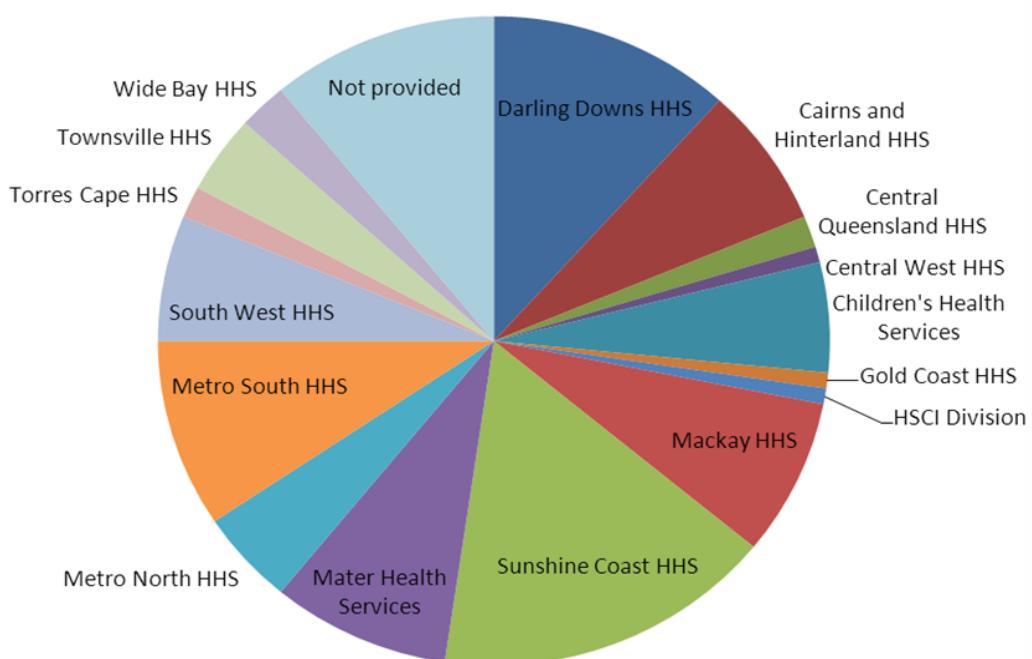


Survey

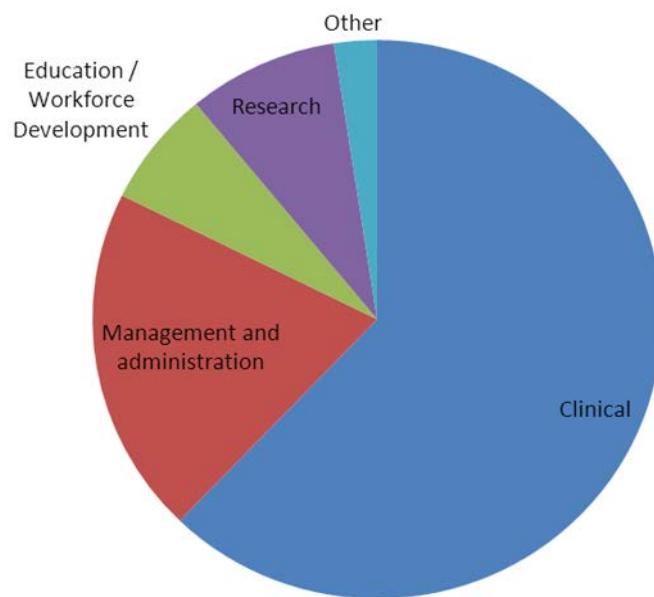
Survey respondents by profession / workforce group (n=128)



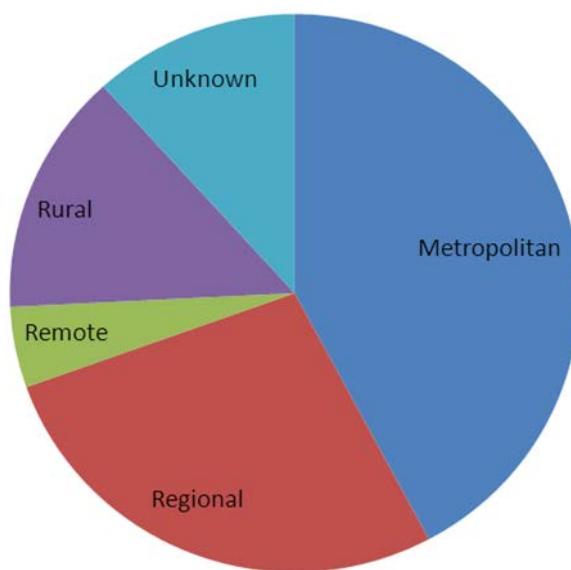
Survey respondents by organisation (n=128)



Survey respondents by primary role (n=128)



Survey respondents by location (n=128)



Abbreviations and definitions

AH	Allied Health
AHA	Allied Health Assistant. The term includes other support worker roles that receive delegated tasks for allied health professionals such as Pharmacy Assistant, Therapy Assistant etc.
AHP	Allied health profession(al), meaning a profession or practitioner of a profession listed at http://www.health.qld.gov.au/employment/work-for-us/clinical/allied-health/career-structure/default.asp
AHPOQ	Allied Health Professions' Office of Queensland
CARU	Clinical Access and Redesign Unit
DOH	Department of Health (Queensland)
HHS	Hospital and Health Service
NAHAC	National Allied Health Advisors Committee
NGO	Non-government organisation
NSW	New South Wales
NT	Northern Territory
SA	South Australia
SARRAH	Services for Australian Rural and Remote Allied Health
VC	Videoconference
WA	Western Australia

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