

Handbook for the
TeleHealth online education module



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Foreword

This monograph was adapted from an online learning module developed by ACRRM in 2012 in consultation with members of the ACRRM Telehealth Advisory Committee (ATHAC) and the ACRRM Clinicians Working Group. The module was developed in parallel with the ATHAC Telehealth Standards Framework and the ACRRM Telehealth Guidelines, which have been referenced to the major international and Australian standards/guidelines for telehealth.

This monograph is structured in accordance with the ACRRM Telehealth Guidelines, which contain three main sections:

- Clinical aspects
- Technical aspects
- Contextual aspects

The monograph also contains an introductory section which provides background knowledge about telehealth and the Commonwealth government's telehealth initiative *Connecting Health Services with the Future*.

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This project has been funded by the Australian Government Department of Health and Ageing up to May 2013.

Introduction

ACRRM's position on telehealth

Telehealth is a broad term encompassing the use of communication and information technology to provide patient care – this includes (but is not limited to) real time video conferencing.

ACRRM recognises that quality rural generalist practice is characterised by the provision of a broad range of services **including** those provided by telehealth. Telehealth is seen by ACRRM as an essential component of effective rural and remote practice.¹

ACRRM considers that:

- Telehealth can improve health outcomes by facilitating timely access to essential specialist services and advice (as evidenced in the ACRRM Telederm project which has been operated by ACRRM for over 10 years.)
- Telehealth further extends the scope of practice of rural generalists to provide comprehensive care for patients in their local community (in consultation with the appropriate specialist.)
- Telehealth can enhance shared care arrangements and facilitate quality models of care involving the patient-end clinicians (rural generalists) and remote-end specialists/consultants.
- Telehealth can contribute to continuity of care and quality of care outcomes for patients if referral arrangements are optimised via telehealth.
- Telehealth can improve the professional relationship and mutual respect between rural generalists and specialists.
- Services provided via telehealth must adhere to the basic assurance of quality and professional health care in accordance with the ACRRM Telehealth Advisory Committee (ATHAC) Standards Framework/ ACRRM Telehealth Guidelines.
- Telehealth should enhance the existing primary clinician-patient relationship (not fragment it.) Telehealth arrangements should complement existing specialist services (where available), build on rural workforce and referral patterns to avoid further service fragmentation, and address practicalities of coordination, scheduling and support from the patient's perspective to improve their continuity of care.
- Telehealth can facilitate up-skilling of both the generalist and the specialist.
- Telehealth enhances training opportunities for registrars at both patient end and specialist end.

However, ACRRM is also aware of possible unintended negative consequences. ACRRM recommends vigilance to ensure that these consequences do not undermine the effectiveness of the MBS telehealth strategy and advises vigilance in ensuring that these possibilities do not occur. Negative consequences which concern ACRRM are:

1. Reduction in the provision of face-to-face visiting specialist services to rural communities;
2. Replacement of scarce face-to-face visiting specialist services to rural communities by telehealth. Commonwealth programs such as MSOAP (Medical Specialists Outreach Assistance Program) and the MSOAP-ICD (Indigenous Chronic Disease) must be maintained as an adjunct to telehealth arrangements;
3. State/Territory government cuts to patient assisted transport schemes when face-to-face care is required;
4. Reduction of specialist commitment towards face-to-face consultations particularly with regard to impoverished and difficult to access subpopulations – Aboriginal, rural and remote etc. This would have cascading negative consequences – including the potential to add to burden and isolation for general practitioners within remote health services. It also has the potential to exacerbate pejorative views of remote area servicing, by limiting first-hand knowledge of the difficulties faced by remote area staff and patient populations.

¹ ACRRM has included the ability to conduct a telehealth consultation as a required ability and core component of its Fellowship. The ACRRM primary curriculum (established in 2000) identifies competence in the provision of fit-for-purpose telehealth services as a training requirement for FACRRM candidates (registrars).



Back to the future: how telehealth is re-invigorating ‘consultant’ medical care

By Prof Richard Murray, ACRRM President

The relentless rise in medical subspecialisation over the last 40 years is colliding with an immutable reality: chronic co-morbidity and the affordability of health systems. Ageing populations, technology

and the rise of chronic non-communicable disease (NCD) is placing strains on health budgets that, quite simply, cannot be met.

In an older era, ‘all-rounder’ general practitioners, faced with a tough diagnostic or clinical management challenge, sought the counsel of a consultant colleague who possessed specific specialist expertise. These professional relationships were symbiotic, referrals were judicious and patients enjoyed the benefit of comprehensive whole-person medicine supplemented by targeted expert advice when it was required.

Increasingly, this has been replaced by specialist waiting rooms and hospital outpatients replete with routine rheumatology, down-the-line diabetes care and common-or-garden cardiac failure. GPs, particularly in the cities, find themselves under pressure to renew standing referrals for organ-based care by organ-based colleagues. The swelling ranks of patients with numerous troublesome organs have the dubious pleasure of waiting in all the waiting rooms!

Such systems often fail the patient – and certainly fail society. There are the opportunity costs of inefficient and often ineffective care. A recent Commission of Audit for Queensland government expenditure review reported a compound annual increase of 12% in state spending on health care over the last decade – with the proportion of total expenditure absorbed by health rising from 19% to 26%. This is a trajectory without a future.

Two technical and informatics revolutions are changing this landscape. Subspecialisation and the fragmentation of medical care has been driven in part by the pace of advancement of medical knowledge – and the challenge for the generalist clinician in staying across the latest developments. Happily, the science of identifying, appraising, distilling and disseminating evidence is catching up with the medicine science. Systematic reviews and clinical practice guidelines – increasingly delivered at the point of care – are a key part of the change. The second revolution is the breakdown of the physical constraints on the specialist consultation through telehealth.

Telehealth brings the specialist and the general practitioner together in the shared care of patients. Done well, the shared interaction between referring doctor, the ‘consultant’ specialist and the patient delivers better medical care, strengthened professional relationships and enhanced insights and knowledge for all. The GP who may have been inclined to routinely refer away the patient with type two diabetes for initiation of insulin therapy builds skills and confidence. The patient has the benefit of a triangulated and consistent communication for understanding and self-care. The consultant is able to apply their vertical expertise to the really challenging problems.

This type of symbiotic interaction between GP and specialist has been more typical of how rural doctors and the specialist consultant colleagues work together. Telehealth affords an opportunity to strengthen that in the bush and to extend the collaborative model more broadly.

With the introduction of Medicare items and other incentives for telehealth consultations, it has been important to promote the right approach to the opportunity that the funding and technology affords.

The approach being taken by the Australian College of Rural and Remote Medicine is to support clinicians, administrators and rural health support teams with practical resources, timely content, and advice regarding rational use of telehealth. With support from the Australian Government, a national consensus framework for technical, clinical and the health service aspects of telehealth has been developed – a great collaboration between medical, nursing, Aboriginal health and peak rural health bodies through the National Telehealth Advisory Committee. The College provides personalised advice for those looking to set up, and a directory.

To find out more (and perhaps ‘get wired’) visit ehealth.acrrm.org.au. This is important work that will hopefully help ensure timely and affordable access to effective medical care for all.

“ Done well, the shared interaction between referring doctor, the ‘consultant’ specialist and the patient delivers better medical care, strengthened professional relationships and enhanced insights and knowledge for all. ”

Prof Richard Murray

Resources

ACRRM eHealth website

www.ehealth.acrrm.org.au is an online community for health and medical professionals (generalists and specialists) who are interested in the use of telehealth to improve access to care for rural, Aboriginal and aged care patients.

ACRRM Telehealth Guidelines

Extracts from the guidelines appear throughout this document, accompanied by interpretive text and examples. See Appendix 1 for a complete copy of the guidelines.



Case study – Emerald QLD

Telehealth specialist consultations ‘indispensable’ to health equity for rural people

The parent, the GP, the paediatrician and the teacher each have a role in dealing with a child’s developmental and behavioural problems.

What are the chances of getting all four together — in the presence of the child — to help resolve these problems?

This kind of holistic, human approach to patient care happens in a rural Queensland town 900kms northwest of Brisbane. It is made possible by telehealth technology (video conferencing) and the determination of a rural doctor to deliver quality and continuity in his care for patients.

Dr Ewen McPhee of Emerald in central Queensland said that the telehealth service was now “an indispensable part of his practice”. He says being able to conduct consultations ‘locally’ with a specialist has a myriad of benefits for his patients, his practice, and the specialists.

“The tyranny of distance is very real in communities like ours,” Dr McPhee explains. “Even if you can readily secure a specialist appointment, your patient will invariably have to take time off work, be absent from family, pay travel and accommodation expenses, and often deal with difficult health issues alone.”

“With telehealth, these problems are less likely to arise.”

With procedures such as surgery the patient must be in the presence of the specialist. However, Dr McPhee says that telehealth can make the preparation for surgery and the follow up more efficient and less traumatic for patients.

“Our consulting plastic surgeon will use telehealth to triage patients,” Dr McPhee says. “For example, if a patient presents with an advanced skin cancer I think should be excised, the surgeon can determine during the initial telehealth consult whether the operation can be carried out on his next visit to Emerald, or if the procedure warrants the patient going to Brisbane.”

“If the patient is also frail, or has small children, being able to eliminate the travelling and time away from home is a relief for them.”

Professional development is another significant bonus with telehealth, according to Dr McPhee.

“I find my knowledge of specialised disciplines expands with each consultation because I am directly involved in the conversation between specialist and patient. Just as importantly, the specialist gets a handle on the rural context and the broader issues that make rural practice different from metropolitan.”

The word has spread around the Emerald district that McPhee Medical offers the convenience of a telehealth service, and patients from other practices regularly enquire about using it.

While this could be viewed a ‘competitive edge’, Dr McPhee is happy to share his knowledge and experience, voluntarily advising other local practices on how to set up for telehealth.

“It really is not a difficult process to set up,” he says. “The technology is commonplace.”

“The imperative for us now is to identify specialists who are set up for telehealth. We currently have good arrangements with a paediatrician, a gastroenterologist, a neurologist, and a plastic surgeon. Our immediate need is to find compatible specialists in areas such as diabetes and endocrinology.”

Chair of the advisory committee Dr Jeff Ayton said that, in addition to establishing a national standards framework for telehealth consultations, ATHAC is driving practical aspects of its expansion by setting up the free directory linking rural and remote health professionals with telehealth-enabled specialists.

“Here GPs and specialists flag their capacity to participate in telehealth consultations — and technical providers list their products and services,” he explained. “We are developing a national community of people and organisations who have a genuine interest in expanding telehealth.”

As part of the national program to establish consistency in standards for telehealth, Dr Ayton said ACRRM is developing online training modules in collaboration with the Royal Australasian College of Surgeons, the Royal Australasian College of Physicians, and the National Aboriginal Community Controlled Health Organisation (NACCHO).

“Online services will include a national forum for all the telehealth support officers employed by Medicare Locals, specialist colleges, NACCHO, nursing organisations and rural workforce agencies to share resources assisting each craft group to meet the standards,” Dr Ayton said.

“It really is not a difficult process to set up....The technology is commonplace.”

Dr Ewen McPhee

Introduction to telehealth



What is telehealth?

Telehealth is the use of information and communication technology to deliver health care at a distance.

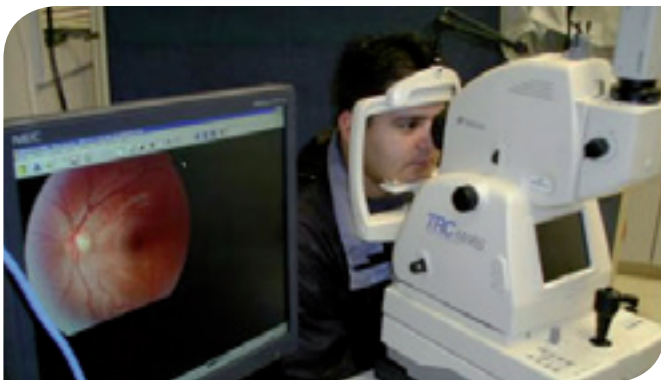
Telehealth is a subset of e-health, which is all the uses of information and communications technology (ICT) in health care, including electronic records and decision support.

In this document, our main focus is the Australian government's *Connecting Health Services with the Future initiative*, which provides rebates for **video consultations** between patients and specialist medical practitioners, where the patient resides in:

- eligible regional and remote areas, or
- eligible aged care facilities, or
- attends an Aboriginal and Torres Strait Islander medical service.

The initiative does not include store-and-forward applications of telehealth, such as sending still images for radiology and dermatology, or sending data such as blood pressure or blood sugar measurements.

ACRRM in collaboration with the Australian colleges of dermatologists and ophthalmologists has made a joint submission to the Department of Health and Ageing to recognize the use of store-and-forward methods as technology recognized for the purpose of the MBS telehealth incentives and rebates.



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Alfred Traeger demonstrates the first pedal radio he developed in 1928. This photograph was taken by John Flynn.

A brief history of telehealth in Australia

Telehealth started in Australia in 1929 with the use of the pedal radio to call the Australian Inland Mission Aerial Medical Service. In the 1970's, early trials of video communication began, and by the mid 1990's several small scale video consultation services to rural areas had been established, which included mental health, paediatrics, and renal medicine. The equipment and connectivity were costly and these services were all operated by state health departments and/or universities. Over the subsequent 15 years many research trials and pilot studies were conducted. The evidence supporting the use of telehealth grew and some of these studies turned into ongoing services. ACRRM has operated successful (store-and-forward) teler dermatology, teleradiology and teletoxinology services for over 10 years.

From the mid 2000's broadband arrived, dramatically reducing the cost of connectivity, and state health departments began to expand their telehealth networks. Medicare item numbers for psychiatrists to conduct video consultations were introduced, but apart from that telehealth remained confined to the public sector. In July 2011, the national telehealth initiative expanded the range of telehealth MBS item numbers, and this has enabled video consultations to become part of routine private practice.

What is the MBS telehealth initiative?

The Australian Government has committed to providing Medicare rebates and financial incentives for online consultations across a range of medical specialties under the *Connecting Health Services with the Future: Modernising Medicare by Providing Rebates for Online Consultations initiative*.

MBS rebates

Telehealth MBS items may be billed where a specialist consultation is conducted **via video conferencing** with a non-admitted patient who is:

- located in an eligible regional or remote area (Note that www.doctorconnect.gov.au provides a look-up facility)
- a care recipient at a residential aged care facility (regardless of location)
- in an eligible Aboriginal Medical Service (AMS) or Aboriginal Community Controlled Health Service (ACCHS)

Store-and-forward telehealth consultations (e.g. for dermatology, ophthalmology, radiology) are not funded via MBS at this stage. (MSOAP funds the ACRRM teledermatology and teleradiology services.)

Minimum distance requirement

On 1 November 2012, the MBS telehealth items were amended to require that the patient and remote specialist be at least 15 kilometres apart.

The minimum distance requirement does not apply to residents of aged care facilities or patients of an Aboriginal medical service.

GP items

23 new MBS support items are available for patient-end services. These enable GPs, other medical practitioners, nurse practitioners, midwives, Aboriginal health workers and practice nurses to provide face to face clinical services to the patient during the video consultation with a specialist. These items have higher fees in recognition of the time and complexity of the service.

The patient **MUST** be physically with the GP to be eligible to claim the telehealth MBS items listed below:

Telehealth Item		Time-based
2100	Level A	Telehealth attendance at consulting rooms
2126	Level B	
2143	Level C	
2195	Level D	
2122	Level A	Telehealth attendance other than at consulting rooms
2137	Level B	
2147	Level C	
2199	Level D	
2125	Level A	Telehealth attendance at a residential aged care facility
2138	Level B	
2179	Level C	
2220	Level D	

Practice nurse and Aboriginal health worker items

Telehealth Item	Not time-based
10983	Outside an inner metropolitan area or at an Aboriginal Medical Service
10984	At a residential aged care facility

Refer to the MBS website for remaining patient-end item numbers (midwives and nurse practitioners).

Specialist items

11 new MBS items are available for telehealth consultations provided by specialists, consultant physicians and consultant psychiatrists with a patient. The 11 new specialist telehealth items specified in the MBS enable eligible telehealth services to be provided in conjunction with 55 existing Medicare specialist consultation items. These new items must be billed in association with one of the existing Medicare items as stipulated in the new telehealth item descriptor outlined below.

Short initial consultations

From 1 January 2013, 6 new specialist MBS items were introduced. These items provide for a short initial video consultation where the consultation is 10 minutes or less of direct clinical contact with the patient (not including the time to set up for the video consultation).

The new items are 'stand alone' items, that is; they do not have an associated item that they are billed with. Patients are unable to be billed for an initial consultation via videoconference (eg 113) and an initial face to face consultation (eg 104) as part of the same course of treatment.

Specialty	Associated Existing Item	Telehealth Item = %50
Specialist	104, 105	99
Consultant physician	110, 116, 119, 132, 133	112
Geriatric medicine	141, 143	149
Psychiatry	291, 293, 296, 300, 302, 304, 306, 308, 310, 312, 314, 316, 318, 319, 348, 350, 352	288
Occupational medicine	385, 386	389
Pain medicine	2801, 2806, 2814	2820
Palliative medicine	3005, 3010, 3014	3015
Neurosurgery	6007, 6009, 6011, 6013, 6015	6016
Assisted reproductive services	13209	13210
Obstetrics	16401, 16404, 16406, 16500, 16590, 16591	16399
Anaesthesia	17610, 17615, 17620, 17625, 17640, 17645, 17650, 17655, 17690	17609
<i>Short initial consultations</i>		
Specialist	Stand alone item	113
Consultant physician	Stand alone item	114
Occupational medicine	Stand alone item	384
Pain medicine	Stand alone item	2799
Palliative medicine	Stand alone item	3003
Neurosurgery	Stand alone item	6004

The fee for the new specialist items is an additional 50% derived from the associated base item. The increased fee recognises that a professional attendance via video conferencing involves increased administrative and professional complexity.

References

Department of Health and Ageing MBS Online
www.mbsonline.gov.au/telehealth
 Specialist video consultations under Medicare
 Summary of MBS telehealth items
 Telehealth program guidelines
 Telehealth eligible areas
 Telehealth Q & A

Why should my practice or health service get involved with telehealth?

Benefits of telehealth

Benefits to patients

- Improved access to healthcare i.e. greater equity
- Reduced waiting time for specialist appointments
- Reduced travel, expense and time away from home
- Faster diagnosis
- Improved continuity of care
- Enhanced shared care between generalists and specialists
- Improved quality of care

Benefits to clinicians

- Professional development for clinicians e.g. experiential learning, informal knowledge transfer
- Reduced professional isolation with collaboration and networking
- Just in time help with difficult cases and emergencies
- Reduced travel, expense and time away from home

Benefits to the health care system

- More cost effective delivery of services
- Improved coordination of care and service integration
- Enhanced training opportunities for students and registrars during rural placements

(Moffatt & Eley 2011, Uniquist Telehealth Assessment 2011, Wade et al 2012)

“Videoconferencing will reduce the amount of transit time for our elderly residents to and from specialist care, especially if it’s a two hour transit to Toowoomba or Brisbane. It will also be beneficial in our relationships with our specialists because we are freeing up some of their time.”

– **Richard Fahy, CEO, Orana Lutheran Complex Kingaroy QLD**

“We can really practice shared care with rural GPs where they would not have visiting psychiatrists or visiting specialists to their town. Seeing a GP through the video link makes it easier for communication further down the track in terms of telephone conversations and so on. There are some drawbacks with the video link. The obvious one is you can’t do a physical examination, but you can do things like an MMSE, and you’re able to provide regular reviews in places where you probably wouldn’t visit or there are no services.”

– **Dr Edward Tan, Psychiatrist, Toowoomba Hospital QLD**

“One of the biggest challenges is to get health professionals to use technology, and to realise it’s actually not difficult. I think sometimes people focus on the technology, but telehealth is not about the technology, it’s about providing a service to patients so they don’t have to travel long distances to access health care.”

– **Dr David Allen, Occupational Physician, Sydney NSW**

“I think it’s a wonderful advance in medicine, especially when the distances are so great, and especially for elderly people who have this problem of not driving. If you’re the patient, so often you’re not able to drive, and therefore if there’s an easier means of contacting a specialist, I think it’s a wonderful set up. I’d recommend it to any future patients.”

– **Mrs Gay Lumsden, Patient, Bright Medical Centre VIC**

Barriers to telehealth	
Patient barriers	<ul style="list-style-type: none"> • Cultural and linguistic differences
Technical barriers	<ul style="list-style-type: none"> • Infrastructure constraints • Technical problems • Concern about technological obsolescence resulting from rapid technological advances • Concern that telehealth is market-driven rather than user driven, and that the market might abandon products and technologies
Clinician barriers	<ul style="list-style-type: none"> • Lack of time and resources • Complexity of telehealth consults • Up-skilling required • Fear that telehealth will increase workload, especially in transitional phase • Preference for the traditional approach • Concerns regarding the inability to examine patients and possible resulting liability or misdiagnosis • Lack of evidence for the efficacy or cost-effectiveness of telehealth • Perceived threat to the role and status of health care workers • Perceived threats to rural providers’ autonomy e.g. not wanting to lose control of their patients, or be dictated to by city-based specialists • Perceived deskilling of rural doctors • Opportunity cost for GPs who have a significant procedural workload is higher (therefore the importance of the practice nurse is greater)
Health system barriers	<ul style="list-style-type: none"> • Lack of interoperability between different technical telehealth systems • Lack of a single telehealth scheduling system • The need for compatible protocols • Access to state health systems • MBS telehealth rebates only apply for synchronous video conferencing • MBS telehealth rebates are limited to specialists at the distant end

(Moffatt & Eley 2011, Uniquist Telehealth Assessment 2011, Wade et al 2012, Hjelm 2005)

Enablers of telehealth

- *Connecting Health Services with the Future initiative* (integrated policy framework, MBS rebates and incentives, capacity to delegate to practice nurse or Aboriginal health worker, other support services)
- NBN infrastructure will be an enabler in the future
- Maturity of IT environment, supporting widespread commercial videoconferencing solutions and equipment
- ATHAC Telehealth Standards Framework and ACRRM Telehealth Guidelines; guidelines from other colleges and organisations
- Training and support – for example ACRRM eHealth website, ACRRM telehealth education modules, ACRRM telehealth curriculum (under development)
- Peer support – Rural health workers as a group are early adopters of technology (Wonca 1998)
- Telehealth Support Officer Network



Echuca docks. Reproduced with permission from Steve Bennett via Wikimedia Commons.

Case study – Echuca VIC

Rich River Health Group is located in Echuca 2.5 hours north of Melbourne. The patient is a local teacher, busy with her work and family. She presented with a chronic itchy rash on her ULS predominantly leaving pale white scars. This had been present for many years without a diagnosis.

Access to a dermatologist was limited to a visiting specialist in Bendigo 92 km away, with long waiting times for non-urgent cases.

Access via the telehealth system occurred after many months of sifting through online and other sources to find a participating dermatologist. Finally this was sourced from a response to a mail merge sent out to all dermatologists on the books.

The consultation was booked via Skype on a dedicated computer with camera.

Pathology results from punch biopsies and photographs were sent via email the week of the consultation.

The telehealth consultation worked well with a provisional diagnosis of prurigonodularis, and treatment has been instituted. At the last minute the planned consultant was unavailable so another 'stood in'. She then had to access the photos/pathology results sent when it became apparent she had not seen them prior to the provisional diagnosis. The patient and GP found it worked well, and the patient was pleasantly surprised when she was not billed for 'seeing' the specialist and her GP together.

Clinical conditions

What is the evidence for the effectiveness of telehealth?

The research evidence in telehealth is very large. This brief summary focuses only on recent systematic reviews of video consultations in clinical practice. Specifically:

Mental health

This is the most researched area of telehealth. Video consulting is:

- As accurate as in-person consultation for psychiatric diagnosis (Hyler 2005).
- Produces similar outcomes in psychotherapy treatment including cognitive behavior therapy. The evidence covers conditions such as PTSD, other anxiety disorders, anorexia, and mood disorders (Backhaus 2012).
- Equivalent for assessing and treating psychosis; does not trigger symptomatology in patients with schizophrenia (Sharp 2011).
- Effective in treating children and adolescents (Slone 2012).

Specialist diagnosis via videoconferencing

Across the areas of dermatology, psychiatry, psycho-geriatrics, neurology, minor injuries in the emergency department, and rheumatology, there was consistently good to excellent diagnostic agreement when video consultation is compared to the traditional in-person consultation (Martin-Khan 2011).

Specialist consulting

Video consulting is feasible and effective, comparable to in-person consultations in clinical oncology (Kitamura 2010), and clinical genetics (Hilgart 2012).

Chronic disease management

- Diabetes: video consulting direct to patients produced some improved outcomes, but pooled HbA1c over all studies was not significantly different from usual care. (Verhoeven 2010, Sirewardena 2012).
- Rehabilitation: with a broad group of long term conditions; physical, mental health and chronic fatigue, video interventions produced similar outcomes to in-person treatment (Steel 2011).
- Chronic diseases in older people: video management had generally positive outcomes, more so than telehealth without personal contact (Van der Berg 2012).

Other points about telehealth research:

- Patients generally report very high rates of satisfaction with video consultations. Clinicians' rates of satisfaction are adequate, but not as high as patients.
- Apart from the reviews cited above there are many individual research articles about a much wider range of clinical applications of video consulting, including burns and wound care, plastic surgery, anaesthetic assessment, speech therapy and physiotherapy, to name a few.
- A lot of telehealth research is situation specific so caution must be exercised in generalizing to other health care settings and countries.
- For the vast bulk of studies the methodology is fairly average.

In summary

The research on video consulting has mainly been done in areas of practice that are either:

- highly visual, or
- need detailed history taking, or
- require good interpersonal communication.

There does appear to be enough evidence to support the use of video consultations under these conditions, and we believe that clinicians can extrapolate to other areas of clinical practice with similar characteristics.

Standards

Introduction to the ACRRM Telehealth Advisory Committee (ATHAC) Telehealth Standards Framework and the ACRRM Telehealth Guidelines

Purpose

The purpose of the **ATHAC Telehealth Standards Framework** is to provide health and medical colleges, clinicians and health care organisations with a common approach to the development of craft specific guidelines to assist members in the establishment of quality telehealth services.

ACRRM has applied these draft standards to establish generic guidelines for general practice and primary care facilities (with an emphasis on rural and remote context.) The purpose of the ACRRM Telehealth Guidelines is to interpret and apply the **ATHAC Telehealth Standards Framework** to the context of the medical specialty of rural and remote general practice in Australia.

Background

Standards for telehealth proliferate. Telehealth is a means of delivering healthcare across many different clinical settings. One set of standards or guidelines cannot cover all of these in detail, therefore ACRRM has chosen to establish a **framework** which relevant craft groups or clinical disciplines in Australia can use to develop profession and health organisation specific telehealth guidelines. This approach was endorsed by the ACRRM Telehealth Advisory Committee (ATHAC) which includes representatives from medical specialist and nursing colleges and organisations, peak Aboriginal health organisations, consumer organisations, the National Rural Health Alliance, the Rural Doctors Association of Australia, Standards Australia, the Australasian Telehealth Society, and the Royal Flying Doctor Service.

The ATHAC Telehealth Standards Framework provides the architecture for telehealth guideline development. ACRRM has partnered with the National Aboriginal Community Controlled Health Organisation, the Royal Australasian College of Surgeons and the Royal Australasian College of Physicians to apply this Standards Framework in the development of their specific telehealth guidelines.

The ATHAC Telehealth Standards Framework also forms the basis for the organisation of content and resources for the online telehealth modules developed by ACRRM for telehealth clinicians including; GPs, staff working in Aboriginal community controlled health services, rural generalists, surgeons and physicians.

This work has been funded by the Australian Government Department of Health and Ageing.

Resources

The ACRRM Telehealth Guidelines have been incorporated into this document. Sections of the guidelines appear at relevant points throughout the document, interwoven with explanatory text and examples.

See Appendix 1 for a complete reference copy of the guidelines.

Reference to other standards

Methodology

ACRRM undertook a scan of Australian guidelines and standards, which were also considered in the design of the Framework.

The ATHAC Telehealth Standards Framework (2012) is referenced to:

- The ISO/TS 13131:2014 – Health informatics -- Telehealth services -- Quality planning guidelines, that provides advice and recommendations on how to develop quality objectives and guidelines for telehealth services that use information and communications technologies (ICTs) to deliver healthcare over both long and short distances by using a risk management process that can be used to generate guidelines adapted to organizational needs.
- AHPRA Guidelines for Technology-based Patient Consultations (2012)
- ACRRM Core Principles for Telehealth (2011)
- DoHA Guidance on Technical Issues (2012)
- Maeder A. Telehealth Standards Directions Supporting Better Patient Care (2008) Health Informatics Society of Australia Ltd
- McConnel FB, Pashen D, McLean R. The ARTS of risk management in rural and remote medicine. *Can J Rural Med* (2007) 12 (4)
- ACRRM International Review of Telehealth Standards (2010)
- Australian Medical Associations (AMA) Guidelines (2006)
- American Telemedicine Association (ATA) Core Standards for Telemedicine Operations (2007)
- RACGP Standards for general practices offering video consultations (2011)
- Defence Update, MDA National. Risk Management for Telemedicine Providers (Autumn 2006)
- Wade VA, Eliot JA, Hiller JE. A qualitative study of ethical, medico-legal and clinical governance matters in Australian telehealth services. *Journal of Telemedicine and Telecare* (2012) 1–6

ARTS Framework

Making clinical decisions in rural and remote medical practice has some unique characteristics:

- Practitioners have a broader scope of practice in a more diverse range of settings, with greater on-call responsibilities;
- Practitioners need advanced knowledge and skills;
- There is extensive collaboration at a distance between rural and remote practitioners, and specialty services, as the full range of specialty services is not available locally;
- Practitioners often have close relations with individuals in their local community;
- Adverse outcomes have implications for the doctor and the community.

In recognition of these differences, ACRRM has constructed a guide to effective decision making in rural and remote areas; the ARTS framework (Assessment, Resources, Transport and Support).

The ARTS framework proposes that clinical management needs to be adapted according to the level of risk, and that the level of risk should be assessed across the three areas of the patient, the doctor, and the community.

This is because health care resources are scarce in rural and remote areas and every decision made by the practitioner impacts not only on the patient, but also on the clinician, the health service and the community. For example, if the patient needs to be transferred out of their locality, then the impact of this on their family and community needs to be considered.

See also the Senate Enquiry Report : The factors affecting the supply of health services and medical professionals in rural areas.

What follows is a summary of the components of the ARTS framework with examples applying particularly to telehealth.

Assessment

Risk	Impact of Telehealth
<p><i>Complexity</i></p> <p>What is the risk of error due to the clinical context and case complexity?</p>	<p>Telehealth adds to complexity. Consider whether or not:</p> <ul style="list-style-type: none"> • the staff are trained to use telehealth • the technical infrastructure is adequate • the right specialist is available • the patient can be accurately assessed by telehealth
<p><i>Socioeconomic factors</i></p> <p>What risk is there to the patient/family and community in relation to dislocation, cost, income and productivity?</p>	<p>Telehealth reduces these risks by helping the patient to stay in their local community.</p>
<p><i>Cultural and psychological factors</i></p> <p>Are there risks from the patients' and communities' beliefs and expectations, or pressure on decisions from non-clinical sources?</p>	<p>Telehealth is so convenient for patients that there might be pressure to use it when an in-person service would be more appropriate.</p>
<p><i>Public health issues</i></p> <p>These include infection control, health promotion and the risk to health services from contagious illness.</p>	<p>The risk of transmitting infection is reduced when telehealth is used. This is more relevant to tele-homecare than to consulting practice.</p>

Resources

Risk	Impact of Telehealth
<p><i>Human</i></p> <p>Can this case be safely managed locally, without compromise to local resources?</p>	<p>Telehealth can increase the safety of local management by bringing in specialist expertise.</p> <p>On the other hand telehealth should not be used to manage a very complex patient locally when this is detrimental to the patient and the health service</p>
<p><i>Advice and information</i></p> <p>Is the availability of clinical information and advice adequate for patient safety and doctor support?</p>	<p>Improving the availability of both timely advice and support is one of the great advantages of telehealth.</p>
<p><i>Technical</i></p> <p>What risk is there to the patient given the available local infrastructure?</p>	<p>Consider if the quality of the connection, the equipment and the network is adequate for telehealth.</p> <p>In a remote setting with an urgent situation, even poor quality video is better than nothing.</p> <p>In a routine setting, poor quality video is a waste of clinical time.</p>

Transport

Risk	Impact of Telehealth
<p><i>Additional risks</i></p> <p>What additional risk is there for the patient, doctor and other health personnel if transport is required?</p>	<p>These risks are reduced if telehealth is used to reduce the amount of travel required</p>

Support

Risk	Impact of Telehealth
<p><i>Psychological</i></p> <p>Does the patient, family, doctor, health care team and community have adequate support available to them?</p>	<p>Telehealth can bring in extra support for patients, and mentoring, advice and professional development for health care providers</p>
<p><i>Management and organisational</i></p> <p>Are there local and distant systems in place that support the management of the patient, or is it a battle to manage the case in the patients' best interest? If organised well, telehealth promotes communication and coordination of care</p>	<p>Be cautious about making telehealth referrals outside the usual referral pathways because this has the potential to fragment care</p>

Clinical practice in telehealth

Case study - Charleville QLD

Fifty-five year old Mary lives in Charleville, alone, and has recently been diagnosed with diabetes mellitus by her GP. Mary's condition is not well controlled and her GP has referred her to a specialist endocrinologist who is 10 hours' driving time away - or 3 hours by charter flight, but Mary is a pensioner and she does not drive.

After some discussion, the specialist endocrinologist and the GP agree that a consultation should be conducted via video conference, in the GP clinic which adheres to the ACCRRM core principles of telehealth and is a fully accredited practice.

Mary has been given an information sheet outlining the telehealth process and is asked whether she wishes to participate in a video consultation with that particular specialist. Having been clearly informed about the entire process, Mary has agreed verbally and given her written consent also, as this consultation will be recorded.

The GP forwards Mary's history and laboratory results to the endocrinologist via secure email.

Practice staff, having received online training through ACCRRM in telehealth, book and prepare a suitable room for video conference which:

- Is private
- Has good lighting
- Is away from traffic and air-conditioning noise
- Has neutral-coloured walls.

The video consulting equipment is conveniently kept on a small trolley and wheeled into the prepared room in good time for Mary's appointment.

Mary is asked to present at the surgery ten minutes prior to the appointment time in order to test for:

- the positioning of seats
- lighting
- sound quality
- comfort levels

As this is Mary's first consultation via telehealth with the endocrinologist, the GP remains in attendance. Before proceeding with the consultation:

- Mary is introduced to the specialist, by the GP
- Both the specialist and the GP confirm that Mary is comfortable with this method of consultation;
- The GP and specialist briefly outline for Mary what the consultation may involve and ensure that she understands and agrees;
- The GP and specialist will ask if Mary has any questions and respond accordingly.

The specialist then asks the GP to perform a physical examination.

Following the examination Mary and the GP return to their seats and proceed with the video conference. The GP reports her findings to the endocrinologist who makes his recommendation.

The video conference is now at an end. The consultation lasted approximately 30 minutes. The GP reiterates clearly for Mary what has been decided, and ensures that she understands that the practice nurse will give her initial assistance with the new regime and organise appropriate patient education for her.

Two subsequent consultations are required with the endocrinologist, via video conference. Attendance by the GP will not be necessary and can be attended by the practice nurse with Mary.

Both GP and endocrinologist may claim a Medicare rebate for Mary's consultation. The GP can claim item 2143 (Level C – Telehealth attendance at consulting rooms) and the endocrinologist can claim item 112 (attendance via video conference by a consultant physician).

Mary pays her GP bill in the usual way as she leaves the surgery. The endocrinologist will send a bill in the mail to Mary and once she has paid this, she may claim her rebate from Medicare.

Patients

Patient orientation; informed about telehealth and the roles of the participants

ACRRM Telehealth Guidelines

1.1 Informing the Patient about Telehealth	
1.1.1	The patient has easy access to plain language information about telehealth, plus the other relevant options for providing care.
1.1.2	The patient is informed about the role of each person who is involved in delivering their care by telehealth.
1.1.3	The patient is informed that standards-based systems are used to protect their privacy and data security, but total protection cannot be guaranteed. If non standards-based systems are used, then the patient is informed about any additional risks to quality, reliability or security.
1.1.4	The patient is informed if there will be out-of-pocket charges for telehealth consultations, compared to other available options.
1.1.5	The patient should know how and where to make a complaint about the telehealth service.

Patient information should include:

- The purpose of the telehealth service – clear reasons why the telehealth consultation was initiated and what were its objectives
- The main benefits, limitations and risks of the telehealth service
- The main differences between telehealth consultations and alternative options for care
- The patient’s rights and responsibilities
- Costs to patient

The role and responsibility of both the patient-end clinician and the specialist should be made clear to the patient. If the patient-end clinician is acting as the GP delegate (e.g. a practice nurse) then this must be explained.

Resources

ACRRM Telehealth Patient Information Sheet – See Appendix 2

References

Department of Health and Ageing MBS Online

www.mbsonline.gov.au/telehealth

Patient Questions and Answers

“Initially we were concerned that, in the occupational setting, patients might not embrace videoconferencing for health care, particularly if it’s not with their regular doctor, or it’s a doctor in a city and they’re in a rural area. But what we found was that patients are very grateful to be able to access timely care from someone who will also collaborate with the health professionals on the ground in their local area.”

– **Dr David Allen, Occupational Physician, Sydney NSW**

“I felt that my leg had healed very well. It is 50 miles from my place to Wangaratta, the person who was to take me on that occasion had to come from Wodonga, which is 60 miles away, that meant a very expensive trip for everyone who was paying for these services. I felt it was a wonderful opportunity to have another means of contacting a specialist without having to go to all that expense or trouble. I felt we would be able to discuss any trouble that was worrying me at the time with the greatest of ease, and I had no qualms about it whatsoever.”

– **Mrs Gay Lumsden, Patient, Bright Medical Centre**

Informed consent; clinical and financial

ACRRM Telehealth Guidelines

1.2 Seeking Patient Consent	
1.2.1	The patient gives informed consent to the use of telehealth. This may be verbally or in writing. If the telehealth consultation is going to be recorded, or if the type of care is substantively different to usual care, then consent should be taken in writing. ACRRM recommends that the consultation not be recorded, except for education/assessment purposes, and ONLY when written permission is obtained.

Video consultations are still new to most patients, so all patients should be given the ACRRM Telehealth Patient Information Sheet or other clear explanation, and then asked for their consent.

This consent could be either verbal or written; if you wish to take written consent, a form has been provided below for your use.

If the video consultation is not recorded, then verbal consent is usually adequate. ACRRM recommends that if you record any aspect of a video consultation (including taking still images) that you obtain written consent. An additional section at the bottom of the consent form is provided for this.

Our rationale for this advice is based on these principles:

The 3 principles of informed consent

1. The patient needs to be given the information.
2. The patient needs to understand the information. This means that the information has to be at a suitable level for understanding, and that the patient should have time to read it, and/or the opportunity to speak with an appropriate person.
3. The patient needs to make a choice. This choice can be revisited by the patient at any time.

Resources

- ACRRM Telehealth Patient Consent Form – see Appendix 3

Types of consent

Written: to be used where there are significant risks, such as operations and procedures. If the risk is very high, it may also be appropriate to give the patient a test to make sure they have genuinely understood the information.

Verbal: to be used for low risk situations, such as unrecorded video consultations.

Implied: to be used in routine situations which are already well understood by patients, such as a standard visit to a doctor. Almost everyone knows this will involve a history, possibly a physical examination, and that the doctor will keep notes, including exchanging information with specialists and test providers. Therefore the patient is not formally asked if they agree to these things.

However, the health care provider needs to be alert for individual patients that do not have this general understanding, for cultural or other reasons, and then move to actively seek consent.

Waiver of consent: see the ARTS framework for the in-principle understanding that there are circumstances where preservation of life or health takes priority over the usual consent process.

Content of informed consent

Consent should cover these areas:

- possible risks
- possible benefits
- safeguards
- alternatives

Patient selection; cultural considerations, safety, ARTS framework

ACRRM Telehealth Guidelines

1.3 Selecting Appropriate Patients for Telehealth	
1.3.1	The health care organisation has a set of criteria about which patients are suitable for telehealth.
1.3.2	The patient and/or their informal care provider need to be able and willing to participate in care by telehealth.
1.3.3	The decision to use telehealth takes into account: <ul style="list-style-type: none"> 1.3.3.1 Clinical factors such as continuity of care, shared care, and the best model of care for the individual patient. 1.3.3.2 Practical factors such as the availability of specialists, local clinical staff and technology. 1.3.3.3 Patient factors such as the ability of the patient to travel, plus their family, work and cultural situation. (see ACRRM ARTS Framework)

Selecting patients for telehealth

Telehealth is beneficial for:

- Patients who cannot access specialist services because they are elderly, frail, have a disability, or have personal, caring or family responsibilities which prevent them from attending.
- Patients who will benefit clinically from accessing specialist services in a timely fashion.
- Patients who for whom telehealth is a substantial convenience, saving many hours and sometimes days of travel for a brief appointment.
- Patients who either do not need a physical examination from the specialist, or the clinician with the patient can undertake this adequately.

Some patients might have a problem with telehealth

Patients for whom a video consultation may be difficult are listed below, with suggestions for working around the issues:

- Patients who are very deaf. The audio quality even with a good speaker is not as good as being physically present. However, the staff member assisting the patient can repeat what the distant specialist has said. Do not leave these patients alone with the specialist, because the consultation will quickly grind to a halt.
- Patients with little English: same as above.
- Chaotic families, such as children running around the consulting room trying to grab the equipment. Distractions such as these are difficult enough for an in-person consultation, but are even harder for a video consultation. Where possible, ask the family to only bring the child who is the subject of the consultation.

“We have to go through a fairly close screening of which residents are going to be best suited for this type of consultation, and it means that our director of nursing has to spend some time discussing with the family and the resident what their requirements are and how we can best fit that in.”

– **Richard Fahy, CEO, Orana Lutheran Complex, Kingaroy QLD**

“We select patients for telehealth based on the assumption that it’s not a case requiring immediate hospital care. In the work that we do we’re generally dealing with sprains and strains, soft tissue injuries, that sort of thing. We ensure that the distal site is aware of the limitations prior to commencing any telehealth services. But they will ring us, and if there’s any doubt that the patient needs to access emergency care, we sort that out and then we start a video consult if it’s appropriate. Then, if we deem during the consultation that they DO need to access emergency care, we organise that straight away.”

– **Dr David Allen, Occupational Physician, Sydney NSW**

“We’re trying to offer telehealth to as many patients as possible for the simple reason that every consultation saves time, saves inconvenience. So anybody who we think would be suitable – as in, has had an orthopaedic consultation at Wangaratta and is due for a follow up – we’ll offer them a teleconsultation. Most patients are more than willing to take a telehealth consultation rather than a face-to-face consultation, unless there have been repeated complications, and it’s usually us who initiate the face-to-face consultation – as in myself and the orthopaedic consultant who say ‘Look I really think you need to go down and have a physical check.’”

– **Dr Paul Duff, GP, Bright Medical Centre, Bright VIC**

Deciding on the use of video consultation

Decisions about the clinical appropriateness of telehealth usually include consideration of the nature and complexity of the consultation, and the role of **physical examination** to inform management of the patient.

Video consultations can be categorised into these three groups:

Interview-based	Usually suitable for simple videoconferencing, such as lifestyle advice, counselling, dietetics, pre-op assessment, post-op follow up, oncology, transplant assessment, medication review, or endocrinology. The clinician with the patient may do basic examination such as taking blood pressure or arranging for blood tests.
Interview plus peripheral device	<p>In addition to the videoconferencing, the clinician with the patient needs to use other devices, such as still photos with dermatology, or video otoscope for ENT. Some training in using the device is usually needed. See ACRRM digital photography resources.</p> <div data-bbox="544 748 1123 1169" data-label="Image"> <p>The image shows four medical peripherals arranged in a 2x2 grid. Top-left: General Exam Camera (a blue and white device with a lens). Top-right: Nasopharyngoscope (a long, thin, flexible tube with a handle). Bottom-left: Otoscope (a handheld device with a speculum). Bottom-right: Electronic stethoscope (a black device with a chest piece and a digital display).</p> </div> <p><i>Reproduced with permission from University of California, Davis and California Telehealth Network.</i></p>
Interview plus physical examination	In this situation, the distant specialist needs the clinician with the patient to conduct a physical examination, as for example with in-patient consultations, or conducting a neurological assessment. The clinician and specialist need to be able to work together closely and trust each other's judgment.

Cultural considerations

Consider the patient's prior experience and comfort level with technology. This has relevance both in terms of cultural expectations about appropriate uses of technology, and in terms of possible concerns about confidentiality or security related to the use of technology. Asking about the patient's expectations and history with technology may uncover some concerns. The provider may also assess the patient's comfort level by processing how they felt about using video conferencing at the end of the first encounter and/or later encounters. (US Dept of Defense 2011)

Video consultations are acceptable and regarded as very satisfactory by most people in the general community and in Aboriginal and Torres Strait Islander communities. However be aware that when considering the full range of culturally and linguistically diverse groups in Australia, people from some cultural backgrounds may not think they have seen the doctor "properly" via a video consultation.

References

- Department of Health and Ageing MBS Online
www.mbsonline.gov.au/telehealth
- Program overview

Provider relationships

Role of telehealth in overall patient management/care plan

ACRRM Telehealth Guidelines

1.4 Using Telehealth in Delivering Care	
	Conducting the Consultation
1.4.1	The role of telehealth in the overall management of the patient is determined. For example, is telehealth for a one-off assessment or for regular follow up?
1.4.8	<p>Relationships with Other Providers</p> <p>Protocols exist about the way health care providers collaborate with each other when using telehealth. These protocols include:</p> <p>1.4.8.1 A method for choosing the best referral pathway. Telehealth has greatly expanded referral options, so the referring provider needs to consider issues such as how to avoid fragmentation of care, and the availability of the specialist for an in-person consultation if required.</p> <p>1.4.8.2 A telehealth referral database (see ACRRM Telehealth Provider Directory).</p> <p>1.4.8.3 A description of how the care is delivered, including any changes to the usual roles of health care providers.</p> <p>1.4.8.4 A description of who delivers which aspect of care, including who takes responsibility for ordering tests, writing scripts, and follow up.</p>

Determining the role of telehealth in the overall patient management/care plan will inform decisions about:

- Referral pathway
- Which clinician(s) should attend the consultation at the patient end.

Resources

ACRRM Telehealth Provider Directory
<http://www.ehealth.acrrm.org.au/provider-directory>

ACRRM Telehealth Letter for GPs to Send to Specialists – see Appendix 4

Referrals

The combination of telehealth and national registration has greatly expanded the number and range of specialists that are available to see your patients. Specialists who are available to consult by telehealth can be found in the ACRRM telehealth provider directory.

However, ACRRM recommends that wherever possible existing referral pathways are maintained, by referring to specialists who have an ongoing relationship with your patients and your health service, and whom the patient could see in person if this was necessary.

Also consider whether or not the patient will need to see the specialist on a regular basis. If the telehealth referral is for a one-off assessment or second opinion, the location of the specialist is less important.

ACRRM has developed a letter for GPs to send to specialists to encourage their participation. Referral templates for GPs and a feedback proforma for specialists is also available.

Patient-end health care staff

There are Medicare rebates for the following types of staff to be physically present with the patient to assist with the video consultation:

- GP or other medical practitioner
- Practice nurse
- Nurse practitioner
- Aboriginal health worker
- Midwife

Only one person can claim a rebate for doing this.



Which staff member should attend the video consultation?

The answer is likely to depend on the patient and their clinical condition; if the patient has complex or difficult issues and the doctor would like advice on diagnosis or management from the specialist, then having the doctor participate in a video consultation is a good way of achieving this.

If the patient is a routine case who is attending a regular follow up visit with the specialist, then the practice nurse could assist the patient.

Follow up

At the conclusion of the video consultation, confirm who is doing what, in regard to ordering tests, writing scripts and arranging follow up. There is a danger at this point that some important task is missed, because each party thinks that the other is doing it. If the patient-end clinician is acting as the GP delegate, then protocols for handover to the GP should be established and implemented.

Conducting a video consultation

Protocols for conducting the consultation

ACRRM Telehealth Guidelines

1.4 Using Telehealth in Delivering Care	
	Conducting the Consultation
1.4.2	If there are any limitations from using telehealth, these are noted and reduced as far as possible.
1.4.3	The referring health care provider confirms the identity of the patient to the distant specialist or health service, and confirms the identity and credentials of the distant specialist to the patient.
1.4.4	The reasonable length of time needed to deliver care by telehealth is determined, and the patient informed about this.
1.4.5	A health care provider from the referring health care organisation is present with the patient for some or all of the video consultation with the specialist.
1.4.6	Telehealth should be delivered using evidence-based guidelines where possible. Where these do not apply, a framework of best fit for clinical purpose should be used, such as the ACRRM ARTS Framework.
1.4.7	The patient's privacy is protected by considering what risks there are to privacy when using telehealth, and developing procedures to manage privacy.
1.4.8	Relationships with Other Providers Protocols exist about the way health care providers collaborate with each other when using telehealth. These protocols include: 1.4.8.5 A protocol for how the consultation should be noted. If two health care providers are consulting with the patient at the same time, ACRRM recommends they should each keep their own notes on their own record systems.

Physical examination

The clinician with the patient will need to do any physical examination that is needed. This is too large an issue to be fully discussed in this document, and it needs more research, but some principles are:

- The distant clinician needs to trust the capability and judgment of the clinician with the patient.
- It is very helpful if the participating clinicians have discussed how to deal with physical examination before commencing telehealth, or when reviewing the use of telehealth.
- Consider developing and using a protocol, particularly for repeated consultations of the same type and in conjunction with practice nursing staff. Protocols for particular clinical situations are likely to become available as telehealth is more widely used.
- A proportion of consultations cannot be fully conducted by telehealth and will need an in-person consultation for completion or as a follow up. Research suggests this proportion is around 10%, depending on the clinical area. Be prepared for this, and consider that an incomplete video consultation is not necessarily a failure; the work done will contribute to the next stage of the patient's care.

"I select patients for this type of medical interface carefully. I believe that any patient that requires a complicated physical examination is inappropriate for this. At this stage I'm really concentrating on cases like simple fractures, or patients who you've established a strong doctor-patient relationship with, and you're just seeing them post-operatively for a follow up or something like that. I think the criterion that I find most useful is that, if you think you could assess your patient without walking around your desk in a face-to-face consultation, then it's suitable for telehealth."

– Dr Mike Falkenberg, Orthopaedic Surgeon, Wangaratta VIC

"A video consultation is obviously different from a face-to-face consultation, so we have to adapt our history and examination. Now the history taking is easy. We do need to spend more time explaining to the patient the limitations of what we're doing. When we're doing a physical examination, obviously we can't do a hands-on examination, so we've worked out some protocols and systems for adapting our current physical examination to a non-hands-on. But we use that with an assistant at the other end, so we can guide that assistant through the parts of the examination that we can't do ourselves. So that means we can do most of the musculo-skeletal assessments by video consultation, but obviously not everything."

– Dr David Allen, Occupational Physician, Sydney NSW

“Feedback from my colleagues: the anaesthetic consultation was quite difficult because the anaesthetist was wanting measurements to be taken of the mouth opening and the jaw and trying to assess the size of the airway via video link, so it was a little bit difficult for that GP to do that.”

– Dr Paul Duff, GP Bright Medical Centre, Bright VIC

Videoconferencing etiquette

Introductions

It is very important that each site needs to know who is at the other end, and to be assured that everyone in the room has been introduced. Finding out there is someone in the distant room that is out of view and hasn't been introduced can be very uncomfortable for participants, as well as being a breach of privacy.

Remember that the role and responsibility of both the patient-end clinician and the specialist are made clear to the patient. If the patient-end clinician is acting as the GP delegate (e.g. a practice nurse) then this must be explained.

Making eye contact

Most people will naturally look at the person's face on the screen. Many devices have the camera just above the screen, and if the screen is small then looking at the face gives a natural result. But if the screen is large, or the camera is set up at a distance from the screen, then looking at the face rather than the camera gives the impression that the person is looking down or away. This is one situation where a bigger screen does not necessarily give a better result.

Image of the sender

Many video communication devices show a small picture of the sender in one corner of the screen. This is useful because the clinician with the patient can tell if they are transmitting what the distant clinician needs to see, such as gait, or close ups, but patients may be self-conscious or find this distracting, particularly with their first experience of video consultation. If this happens it can be turned off when the patient is talking directly to the distant clinician.

Having a conversation

Most consultations will take place with both parties using hands-free or loudspeaker mode. With most equipment, this means that only one person can speak at a time; if two try and talk at once only one will be heard. There will usually also be a short delay due to the actual time taken for transmission.

It is therefore necessary to pause after speaking, be more conscious of taking turns, and it is harder to interrupt.

If the environment is noisy, use the mute button when not speaking. If the sound quality is very poor, use a handset or a headset if one is available. This may not be possible for the clinician who is with the patient.

Body language

Video communication allows the distant clinician to obtain some information about body language and posture, but this is less than with an in-person consultation. Therefore more attention needs to be paid to the words and tone of voice. This is why good quality sound is so important for enhancing the quality of a video consultation.

Feeling awkward?

Video communication often feels awkward or artificial, especially when first starting out, although it becomes more natural with practice. The things that clinicians report as being different include:

- Having to concentrate more intensely, so feeling that telehealth is more effort than an in-person consultation.
- Feeling more distant from the patient.
- Needing to stay in view of the camera may cramp the style of a clinician who usually moves around the room.

Patients are generally very positive about video consultations, reporting high rates of satisfaction (higher than clinicians), rapport, and willingness to repeat the experience. Hence the patient is probably feeling better about the video consultation than you are.

Concluding the consultation

Confirm who is doing what, in regard to ordering tests, writing scripts and arranging follow up. Remember there is a danger at this point that some important task is missed, because each party thinks that the other is doing it. If the patient-end clinician is acting as the GP delegate, then protocols for handover to the GP should be established and implemented.

Clinician-patient etiquette

- Educate the patient/family about what to expect during a telehealth consultation, including the potential for an audio-video delay
- Ensure that remote specialist and patient can see and hear each other clearly
- Identify microphone and camera locations to the patient
- Provide opportunities for questions and answers
- Be alert and sensitive to nonverbal body language
- Ensure the patient/family is comfortable with the telehealth consultation, and are aware of their right to terminate the consultation at any time

- Assess and implement an appropriate plan for cultural, language and disability issues

(American Telemedicine Association 2011)

Documentation: notes and patient records

Consultation notes

Both patient-end clinicians and specialists should document the clinical consultation in the usual manner. A note should be made in the patient's files that the consultation occurred using telehealth.

In addition to usual documentation requirements, documentation for each telehealth session might include:

- Mode of service delivery.
- Sites that were linked.
- Attendees at the session including names of healthcare professionals and others present.
- Any technical difficulties that occurred that impacted on the clinician's ability to discharge their duty of care.
- Responsibilities among the team for each element of the patient's management.

(MDA National 2006)

MBS explanatory note A59

Participating telehealth practitioners are required to keep contemporaneous notes of the consultation and this includes documenting that the service was performed by video conference, including the time and the people who participated. Only clinical details recorded at the time of the attendance count towards the time of the consultation. It does not include information added at a later time, such as reports of investigations.

Patient records

Ensure the specialist receives the referral letter and any other relevant information e.g. results of investigations prior to the consultation.

Ethical and legal issues in telehealth

Clinical limitations and ethical issues

ACRRM Telehealth Guidelines

1.4 Using Telehealth in Delivering Care	
	Conducting the Consultation
1.4.2	If there are any limitations from using telehealth, these are noted and reduced as far as possible.

Ethical issues that have been raised in the practice of telehealth include:

Patients	
Privacy	Ensuring patient privacy needs extra attention. Because people speak louder on a videoconference, the physical and audio privacy of the room should be checked. Data transmission and storage are potential sources of a privacy breach. (See technical aspects section) Some patients report that telehealth improves privacy, for example being able to see a psychiatrist without needing to visit their rooms.
Informed consent	Because telehealth is new, giving patient information and obtaining informed consent is very important. (See informed consent section)
Access to care	Telehealth improves equitable access to care, which is a major ethical benefit for patients.
Autonomy	Patients greatly value the increased convenience of telehealth and generally regard it as improving the range of service options. Some patients prefer to go to the city for social reasons. Giving patients both options, where this is possible, respects their autonomy.

Clinicians	
Quality of care	Fast access to high quality, “just in time”, advice about specific patient issues can improve patient care. Subspecialist expertise can be brought to patients with rare or complex conditions. On the other hand, some are concerned that rural clinicians may become more dependent on specialists and hence less self-reliant. The lack of physical examination by the distant clinician will also impact on the quality of the consultation, and the ability of this to be compensated for by the clinician with the patient needs to be considered.
Education and upskilling	Telehealth increases access to mentoring, supervision, and distance education. Some clinicians say this additional support improves their retention in rural and remote areas. However a proportion of professional development needs to remain face to face for hands-on training and social reasons.
Using telehealth legitimately	There is the potential for some clinicians to exploit telehealth to maximize profit in today’s market-driven health care environment. Maximizing income from technology is not necessarily a bad thing, as long as there are clear clinical indications for its use.

Patient-clinician relationships

Generally, patients report that rapport and relationship are present in video consultations. However clinicians are concerned that the healing relationship might be depersonalized or compromised by the loss of caring touch, particularly in sensitive areas such as discussing end-of-life issues. If loss of rapport is a problem, returning to an in-person consultation should be an option.

Health care system

Cost reduction	Telehealth reduces transport costs for patients and clinicians. In theory this enables funds to be redirected to other aspects of care.
Workforce	<ul style="list-style-type: none"> • Telehealth is one of the few interventions that can, by reducing the need to travel, increase the efficiency of the existing health workforce. • Telehealth enables a much broader distribution of specialist expertise. • Some clinicians are concerned that telehealth might produce a generation of city specialists who only do video consultations, resulting in less procedural work being done in the country. • However procedural specialists can use telehealth to do most of their pre and post-operative consultations, so they can use their time in the country to fit in more procedural work. We have examples where this has actually happened in ophthalmology.
Integration of care	<p>Telehealth improves communication between clinicians and hence can increase integration of health care.</p> <p>On the other hand, if telehealth cuts across local health care workers and existing referral pathways, it can produce fragmentation of care. Wherever possible, build telehealth into existing referral networks.</p>
Clinical governance	Some specialty services have used telehealth to promote the uptake of evidence based practice and clinical guidelines. If done well this can be very supportive and useful for rural services. If not, it can be perceived as a threat to clinical autonomy.

In practice:

Clinicians constantly make judgements about their ability to make key clinical decisions in various contexts, and adjust their decision making accordingly. For example, they will moderate decisions according to the setting (e.g. on the telephone compared to at the bedside) or with whom they are communicating (e.g. a patient, junior doctor or senior specialist). To many doctors, video consultation will represent a new medium in which to make clinical judgements. Initially, they will need to be cautious in making critical decisions. Over time, it is expected that clinicians will become familiar with the advantages and weaknesses of the videoconference modality, and increase the range of practice within which they are willing to make judgements. (Uniquist Business Case 2011)

Case study – Ethics

Marjorie is a 68-year-old widow living with her 35-year-old disabled son in a small unit in the centre of Adelaide. Marjorie has a number of co-morbidities requiring her to take a complex array of medications. She is confused about her medications and telephones the GP surgery to request an immediate referral to the endocrinologist. She has heard about telehealth and is demanding to have a consultation via video conference.

The receptionist in the five doctor practice takes a telephone call from Marjorie on a Friday afternoon. Marjorie says that she has heard about the new telehealth facility available to patients and wants to organise for an immediate consultation with the endocrinologist, via videoconference, who, she maintains is the only one who can sort out her medications, with which she is having immense problems. Marjorie is adamant she can only be available on a Sunday evening from her home and is “more than happy to attend the consultation alone” and asks for the contact details for the endocrinologist so that she can telephone to organise the appointment for herself.

Privacy, security and confidentiality

ACRRM Telehealth Guidelines

1.4 Using Telehealth in Delivering Care	
	Conducting the Consultation
1.4.7	The patient's privacy is protected by considering what risks there are to privacy when using telehealth, and developing procedures to manage privacy.

Department of Health and Ageing (DoHA) guidance

Clinicians should be confident that the technical solution they choose is sufficiently secure to ensure **normal privacy requirements for health information are met** (*DoHA Guidance on Security, Privacy and Technical Specifications 2011*).

Privacy

The privacy laws in Australia are complex. Privacy legislation seeks to provide individuals with some control over the collection and handling of their personal information by balancing competing public interests between the individual's right to privacy and the benefits of the free flow of information (*Uniquist Business Case 2011*).

Remember it is very important that each site knows who is at the other end, and to be assured that everyone in the room has been introduced. Finding out there is someone in the distant room that is out of view and hasn't been introduced can be very uncomfortable for participants, as well as being a breach of privacy.

People participating in a video consultation may need to talk more loudly than usual, so it is important that they cannot be overheard. Particularly when using a room that is not usually a consulting room, use the ACRRM telehealth privacy hanger on the door.

Security

Technology alone cannot provide the protections necessary to ensure privacy compliance. A combination is required consisting of strong policy, good working practice together with the appropriate application of security technologies (*Uniquist Business Case 2011*).

Confidentiality

Breaking confidentiality can be classified as breaches of security or inappropriate disclosure of individual patient information to unauthorised persons. Such inadvertent or inappropriate disclosure can be both visual and auditory, such as the unauthorised viewing or hearing of video conferenced interactions with patients, viewing photos of patients, or viewing electronic medical records that have been received from another provider or retrieved from an otherwise protected database. Unauthorised use may be as subtle as using digital images from a telemedicine case in a presentation.

Confidential information should be protected whenever transmitted, stored, received or otherwise disposed of to ensure that patient confidentiality is respected and that personal identifiable information is protected. Unauthorised, often quite innocent, disclosure or viewing may occur with both live-interactive and store-and-forward interactions (*Fleming et al 2009*).

The technical aspects of privacy are explored in the Technical Aspects section of this module.

Resources

ACRRM Telehealth Do Not Disturb Door Hanger – contact ACRRM for your copy

Duty of care

- When more than one clinician is involved in the care of a patient, each clinician has a duty of care to that patient. Some clinicians think providing a video consultation does not result in a duty of care if the distant clinician is only offering advice to the local clinician, who is the primary provider. Actually, the duty of care is shared, although not necessarily in equal proportion.
- The division of tasks such as investigations, providing scripts, and follow up, should be agreed and written down so that each clinician is clear what their particular responsibilities are for patient management.
- The medical practitioner who is at a distance should evaluate the value of information gathered by the clinician who is with the patient, and take the initiative to ask for more, or for an in-person follow up if they think additional information is needed to make a decision or offer sound advice.

Insurance and professional indemnity

The standard of care for telehealth imposed by law will be no less demanding than in conventional care. While the law will apply established legal principles to telehealth cases, precisely how it will do so is far from certain. However the Australian Government Department of Health and Ageing (DoHA) has advised that medical indemnity providers have not raised any additional issues associated with telehealth usage.

ACRRM together with specialist college members of the Telehealth Advisory Committee have developed a set of core inter-professional principles which direct clinicians in appropriate professional use of telehealth. This advice is also consistent with that provided by insurance providers in Australia and America.

ACRRM is currently liaising with medical indemnity providers to remain abreast of developments in the field, and will advise members of relevant developments via the eHealth website.

The Physicians Insurers Association of America (PIAA) and Medical Defence Australia (MDA) have both provided written advice and reports. Although these reports are a little dated, they still provide valuable guidance, and they are entirely consistent with the advice given in the ACRRM Telehealth Guidelines and in this module.

MDA National advice

Some of the medico-legal issues that members need to consider include:

- The standard of care and professional guidelines that govern traditional medical practice are equally applicable to video consultations.
- Videoconference equipment must be adequate to support diagnostic and/or treatment needs.
- Patient safety, confidentiality, privacy and security of data should be at the forefront of the consultation.
- Delineation of roles and professional responsibilities and any follow up arrangements should be clearly defined prior to and at the end of the video consultation.
- Documentation of the video consultation should be made by the eligible specialist and GP.
MDA 2006)

Physicians Insurers Association of America (PIAA) advice

The PIAA published a report entitled 'Telemedicine: a Medical Liability White Paper' (1998) recognising that risk management initiatives need to be implemented at all levels of service delivery and at all stages of the delivery chain.

The report is still relevant today. Its major risk management recommendations are as follows:

- 1) Become proficient with the technology.
 - a) Know the minimum specifications required for the use of any technology employed.
 - b) Employ and maintain the highest confidentiality controls possible.
- 2) Ensure that the use of telemedicine is appropriate for the situation.
- 3) Educate patients regarding options and limitations in the use of telemedicine.
- 4) Become familiar with referring physicians and their credentials.
 - a) Maintain an understanding with referring physicians regarding documentation, case management and follow-up responsibilities.
 - b) Ensure that there is compatibility with that practitioner.
- 5) Inform your insurance carrier of the nature and scope of your telemedicine practice.
- 6) If technology does not provide a clear assessment or if results are equivocal, see the patient in person, refer him/her for face-to-face or follow-up consultation.
- 7) Make sure there are realistic expectations of all parties. This technology is not perfect or appropriate for all types of physician-patient interactions.
- 8) Clarify roles and responsibilities of all practitioners. Make sure the division of responsibilities is clear and complete.
- 9) Make sure contractual issues are reviewed and clarified. Contractual issues include those with other providers, vendors and equipment manufacturers.
- 10) Maintain an archive of each system in use.
- 11) Maintain a system for performing and retaining backups of the systems in use
- 12) Ensure that all office staff are aware of their responsibilities.
- 13) Make every attempt to personalize the telemedicine encounter.
- 14) Document, document, document. Document events appropriately to include equipment used, resolution. It is important to document technology as well as the interaction.

It is noteworthy that the PIAA emphasized the importance of accurate and adequate **documentation** and the need for thorough **communication with patients**.

Evaluating telehealth

Patient evaluation

ACRRM Telehealth Guidelines

1.6 Evaluating the use of telehealth	
1.6.1	Individual After their first use of telehealth, the patient should be asked for an evaluation of the experience. If the patient is making long term use of telehealth, this evaluation should be repeated at regular intervals or if warranted by a change in the patient's condition.

Because video consultations are new to most clinicians and patients, we recommend asking patients to fill out a structured feedback form. This will provide information for the practice to review the use of telehealth and guide future decisions.

Resources

ACRRM Telehealth Patient Evaluation Form – see Appendix 5

Continuous quality improvement, telehealth practice audit

ACRRM Telehealth Guidelines

1.6 Evaluating the use of telehealth	
1.6.2	Organisational At suitable intervals of time, the health care organisation evaluates the usefulness of telehealth across the organisation as a whole, and makes decisions about the continuing range and volume of telehealth used by the organisation.

A telehealth audit has been developed by ACRRM so that clinicians can take a more in-depth look at their video consulting practice.

Resources

ACRRM Telehealth Audit – see Appendix 6

Technical aspects of telehealth

This section of the module is an introduction to the technical issues involved in video consulting. It is pitched at the level of the principles involved, so that clinicians will know what issues to consider and what questions to ask. It is not a technical manual and does not go into details about particular brands of equipment or technical standards, as these change rapidly. We recommend that you read this document first and then contact ACRRM, your Medicare local, or your specialist college for detailed advice tailored to your own practice and circumstances.

ACRRM Telehealth Guidelines

2.1 Adequate Performance	
2.1.1	The information and communications technology used for telehealth is fit for the clinical purpose. Specifically: 2.1.1.1 The equipment works reliably and well over the locally available network and bandwidth. 2.1.1.2 The equipment is compatible with the equipment used at the other telehealth sites. 2.1.1.3 All the health care organisations participating in the teleconsultation, plus the network or other means of connection, meet the standards required for security of storage and transmission of health information. 2.1.1.4 Peripheral devices are used in a fit-for-purpose manner jointly determined by the patient-end clinician and the distant specialist.
2.2 Commissioning of Equipment	
2.2.1	The equipment is installed according to the producer's guidelines, where possible in collaboration with the other organisations/clinicians using the telehealth system.
2.2.2	The equipment and connectivity are tested jointly by the participating health care organisations to ensure that they do what the producer claims that they will.
2.3 Risk Management	
2.3.1	A risk analysis is performed to determine the likelihood and magnitude of foreseeable problems.
2.3.2	There are procedures for detecting, diagnosing and fixing equipment problems.
2.3.3	Technical support services are available during the times the equipment will be operating.
2.3.4	There is a back-up plan to cope with equipment or connectivity failure, which is proportionate to the consequences of failure. For non-urgent consultations, rescheduling or completing by telephone may be sufficient. If urgent work is likely to be undertaken by telehealth, consider installing an uninterruptible power supply and a second source of connectivity.

Connectivity/bandwidth

The first important technical issue in video consulting is the quality of the calls. Are the sound and picture clear without stalling, blurring, fragmenting, or loss of the call altogether?

Video calls contain about three times more information than audio calls, and the exact amount of information needing to be sent depends on the:

- Number of pixels in the picture
- Frame rate, which is the number of pictures sent per second
- Encoding standard used for the picture

The quality of the call must be maintained from one end to the other – inside the general practice, from the general practice to the local communications provider, along the backbone of the communications system to the other provider, and then to the recipient. A fault or slowdown at any point is enough to disrupt the entire call.

Types of connectivity

DSL (Digital Services Line)

Also known as “broadband”, this is the most common form of connectivity that private practices and non-government health services use today. The usual type of DSL that is available is ADSL (Asymmetrical Digital Services Line); it is asymmetrical because the download speed is faster than the upload speed. The space available on your DSL line is shared with all the other customers of your telecommunications or internet service provider, and during busy times the speeds will be lower than advertised. Therefore when using DSL, get the fastest speed available, with the advertised upload and download speeds being at least 512 kilobits per second in each direction.

Additionally we recommend purchasing a business grade service if one is available. This will not necessarily be any faster than a domestic service, but is usually sent through a part of the network with lower load, so reliability is higher. Also, if there are problems the business customers will be fixed first.

Mobile broadband: 3G and 4G

These can be used for video communication, but the quality is variable. We recommend getting technical advice specific to your area if you are considering using this method of connectivity. Some general points are:

- 4G is much faster than 3G but is not generally available more than 10km from the centre of major capital cities.
- How good the service is depends very much on the distance from the nearest tower, and how many other people are using the service at the same time.
- In some rural areas, the 3G can be significantly better than the DSL service, particularly if the site is more than 3 km from the exchange or if the local cables are damaged, so it is worth looking into this if the DSL is poor quality or unavailable.

Satellite connection

Due to the long distance to the satellite and back, there is a noticeable delay of around half a second. Also affordable satellite connections have very limited bandwidth and poor upload speeds, so video communication is often difficult. Only use this in remote areas

where nothing else is available. The quality is better if one avoids the times of highest general usage, which are 9am, lunchtime and 7 – 9 pm.

ISDN (Integrated Digital Services Network)

An ISDN line is a digital telephone line with a data speed of 128 kilobits per second. Three of these are needed for a good quality video call. They are very reliable because these lines are not shared with any other users, but are expensive to operate, and have mostly been used by government departments.

Coaxial cable

This was initially only for cable TV, but can now be used to obtain an internet connection. If it is available in your area, it will have a very fast download, and if the upload speed is also good, then it can be used as a reliable means of video communication.

Fibreoptic cable

This is the method of connectivity used by the National Broadband Network. It is very fast, with less delay in transmission and is very suitable for video communication – use for telehealth if and when it becomes available in your area.

WiFi

This is the very limited range wireless connection used to provide mobile connectivity at short range. Within this range it is very fast, and you should not notice any decrease in speed compared to having a physical cable connection to your router or modem. However, the signal decreases in strength rapidly with distance, and does not go through solid walls very well, so there may be parts of a health service where the wifi does not work. If this is the case small repeater stations can be installed to increase the range. Do not do telehealth over the public wifi that is available in places such as airports and cafes because the security is questionable.

“In terms of the technical considerations, we generally find the biggest problem is access to bandwidth. People ask me all the time ‘Have I got enough internet connectivity? What’s my speed like? What’s my broadband like? Will it work on wireless?’ Generally speaking if you’ve got reasonable broadband such as ADSL, NextG, 3G and so on, you can access telehealth. The limiting factor at the distal site, in other words the rural or remote site, is the upload speed. So when people test their speed they often look at how fast they can download data, but it’s not so much the download speed that’s important for the site where the patient is, it’s the upload speed. The information from the webcam at that end, that needs to be fed up to the specialist, so your upload is often the bottleneck, and that’s the variable we need to address. There are a few things you can do, particularly if your internet provider has access to services like Annex M that will actually boost your upload speed and bring down your download speed. If you’re close enough to a wireless internet tower, you can actually get better speeds off wireless internet than you can off ADSL or ADSL2 in some circumstances, so I think people shouldn’t discount wireless technology because in some areas it’s actually better than the services over copper wire.”

Dr David Allen, Occupational Physician, Sydney NSW

Equipment

Standard definition or high definition?

Before discussing hardware and software, some basics about image resolution may help resolve common confusion about whether to get so-called “standard definition” or “high definition” equipment.

The resolution is the number of pixels in the digital image; the more pixels, the higher the resolution and the sharper the image (unless it is out of focus due to the limitations of the camera or the operator!)

The typical videoconferencing units which have been in use since the mid 1990's transmit a picture of 320 X 240 pixels. This is the resolution which has been used for almost all telehealth research and practice to date.

Many of the newer units coming onto the market today use 640 X 480 pixels, which is called high definition; they have four times as many pixels, therefore one needs four times the bandwidth for accurate transmission. If a high definition signal at a fast frame rate (say, 30 per second) is forced through a typical broadband connection, it will break up. Also, the equipment at the other end of the call needs to have the same resolution to have a high definition call.

Seeking higher and higher resolution for its own sake is pointless; for some equipment we are near or at the point where the resolution of the image is greater than the resolution of the human eye. There is no need to pay extra for something that one cannot actually see.

A modern computer screen usually has 1024 X 766 pixels. If you put a 320 X 240 pixel image on this screen it will only take up part of the screen. It is possible to enlarge the image to fill the whole screen, which is useful if one is seated at a distance, but if you are close to the screen enlarging the image will not enhance the resolution.

In practice:

- Standard definition is still quite adequate for most types of video consultations.
- High definition equipment needs higher bandwidth; all of this costs more and may be unworkable in some rural areas.
- To see details such as skin lesions, wounds or small print, a close up camera is a cheaper and more effective piece of equipment than a high definition system.
- One situation where a high definition system is useful is surgical mentoring, where a distant surgeon is advising a local team who are operating. In this particular case a high resolution over a larger field of view is important.

General issues in equipment selection

Location of video screen

Do you want the video image to be on the same computer screen as the usual clinical desktop? Using medical records or practice management software at the same time as conducting a video consultation is easier if they are on different screens. If using hardware, this will come with a separate screen, or if using software, some practices have purchased a separate laptop for video consulting and installed the software on that.



Number of video points

Do you want every consulting room to have video communication capability? How many video consultations are you likely to be doing simultaneously? Practically speaking, even a fast DSL connection that is dedicated solely to video calls can only handle two video calls simultaneously. One option is to have the video equipment on a small trolley and move to whichever room is required, in which case it must be able to operate via your local wifi.

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Reliability

In general separate hardware is more reliable.

Software, particularly if it is external to the computer's usual applications, is less reliable, and requires more time from the user to keep it in good working order. It will need regular updates and may fall over if other aspects of the computer are updated, such as the operating system. It may also stop working if changes are made to the routers or firewall on the practice network. Software can also cause issues with the medical records software – support desks may tell you the video is the reason the medical records do not work.

Types of hardware

1. Video conferencing equipment



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By this we mean the larger units that are the mainstay of State Health Department video communications systems. They usually have one or more large screens, an external remote controlled camera, and external microphones and are either set up in one room, or mounted on a large trolley.

Advantages

- Good for multiple site meetings, hence good for multi-disciplinary case conferences and education events.
- If there are two screens, these can be split between the consultation video and other data, such as radiology.
- Reliable operation.

Disadvantages

- Too large for most consulting rooms.
- Not intuitive to operate; without regular use and staff training they may end up in a corner covered by a dust sheet.
- Prices range from expensive to very expensive. Hence most health services will only have one per service or unit. There may then be a problem of trying to fit clinical consultations between the meetings and educational events for which it is also being used.

2. Videophones; smaller units that resemble telephones



Advantages

- Will fit on a clinician's desk.
- They are the easiest of all equipment options to use; some function just like a telephone.
- Reliable operation.
- Moderately priced.

Disadvantages

- They still cost more than most software.
- They are designed for the main function of video communication, so are not as versatile as a laptop.

3. Mobile devices such as i-pads and smart phones



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Advantages

- Great flexibility for being on-call or for home visits.

Disadvantages

- Small image size.
- Hard to do a consultation on a device that has to be held in the hand, although using a stand may help.
- Call quality often variable and unreliable when out in the field. It will be better if using local wifi.
- Potentially easier to breach security; need to ensure transmissions are encrypted.

Software

There are hundreds of different types of video communication software. Because there has been much use of Skype, it is discussed next in its own section.

Advantages

- Video software is usually cheaper to purchase than hardware, although recurrent licensing fees will add up.
- There are a very wide range of ancillary devices that can be attached via a USB port.
- Video software can be combined with other functions such as sharing medical records and booking appointments. (However, although this is an advantage in theory, in practice it makes the process more complicated, and it may be better to start by only doing video consultations)

Disadvantages

- Video software is less reliable than hardware.
- The time taken to get it operating and keep it going is often more than one anticipates.
- Interoperability is difficult, because software tends to be updated frequently (see below for more about interoperability).
- The sheer number of options available is a problem, making it hard to choose, and unlikely that other health organisations are using the same software.

Resources

ACRRM Telehealth Technology Directory
www.ehealth.acrrm.org.au/technology-directory

The ACRRM telehealth technology directory can be searched by type (e.g. desktop, mobile, hardware), operating system, free vs. paid, and compatibility with state health department telehealth systems.

ACRRM advice on risk management when using Skype for clinical video consultations

Many clinicians are using Skype for clinical video consultations.

Skype is free software which can be downloaded and installed on a computer, and used for making video calls. Skype has over 600 million users all over the world. To use Skype, it is necessary for each party conducting video communication to have the software and to have signed in to the Skype address book.

Using Skype for clinical consultations is allowed by the Department of Health and Ageing, and by Medicare.

DoHA emphasises that the decision to use, or not to use, telehealth together with the *choice of particular hardware or software methods for consultation* should rest with the clinician. In making their choices, *clinicians should consider any legal (privacy and security), safety and clinical effectiveness implications.*"

There are some risks to using Skype; some government departments and many large organisations do not allow the use of Skype.

So, what are the issues and how can these be managed?

Quality of service

Under perfect conditions the image quality of a Skype video call is very good, but if there are difficulties at either end of the call or the connectivity in between, the picture and sound will vary in an unpredictable way. Jerky movement due to low frame rate, freezing and drop outs may occur at any time.

One of the reasons for this is because there is no means of giving priority to a Skype call over other traffic on the same connection, such as sending emails or downloading web pages. Skype (and other similar solutions) perform poorly when the bandwidth is marginal.

Skype does not offer any technical support. IT providers can assist with setting up and getting connected with Skype, as well as with education about how to use Skype, but they cannot access the inner workings of Skype.

On the positive side, Skype is readily available, familiar to most clinicians and easy to use.

Mitigating the risk

- Make sure the connection bandwidth is as high as possible, and preferentially install a separate broadband connection for video calls.
- Try not to use Skype for long consultations. If consultations last for an hour or more there is a significant risk of Skype dropping out at least once over that length of time. If this happens and your only option is Skype then use the telephone for the audio component of the call to maintain a connection with the specialist until the video link is resumed.
- If it is likely that video calls will be used regularly for critical or urgent clinical consultations we recommend setting up a more reliable means of video communication.

Security risks of Skype video calls

- Skype is encrypted during transmission; the risk of a transmission being intercepted is low if there is a direct connection between the two ends.

- However, Skype may send the information in the call outside of Australia, through countries with the means and the intention of monitoring calls.
- Skype is a proprietary system which cannot be audited from outside, so there is no way of finding out if a security breach has occurred or not.
- Groups operate which send multiple unsolicited calls through Skype, and some of these are malicious, being used, for example, to enable remote access to the user's computer.

Using the ordinary telephone is not encrypted, so the argument could be made that Skype is safer than a phone call. However the point is that it is illegal to intercept a phone call without a warrant, whereas it is not illegal to intercept IP data over a network.

Mitigating the risk

- Our judgment is that it is reasonably safe at the present time to use Skype for video calls, but that the means of interception and range of organisations able to do this may grow and spread.
- Use your own judgment about the sensitivity of the consultation and the risk to the patient if the call is intercepted. If this risk is high, use the telephone for the audio component of the call.

Security risks of sending data through Skype

Skype has the ability to send text in a chat room format, and also to transfer files. This information is stored, therefore the risk of a security breach here is much higher than for video calls, because stored information is vulnerable to hacking at any time into the future. Two other issues are:

- Text is kept in a history file, so could be called upon as medico-legal evidence
- Transferred files may contain viruses or malware.

Mitigating the risk

- Do not use the text chat or the file transfer features of Skype for clinical purposes.

Wrong connection

Because the address book is so large (>600 million), there is the potential for many people to have the same name and hence there is a risk of linking up to the wrong person.

Mitigating the risk

- Identify all users before accepting them to your address book.
- Never accept anonymous calls. Only accept calls with predefined users who are in your address book.
- Start the Skype video call with the patient outside of the camera range, and only bring them in view when the identity of the specialist has been established.

In summary

- Skype is already being used by many private specialists and therefore provides the opportunity for clinical consultations for a wide range of patients.
- Skype will not work with the telehealth systems used in most hospitals by specialists providing video consultations to non-admitted private patients.
- Skype is of variable quality and reliability.
- Skype was written for the general community with no focus on medicine.
- The risk of an outside agency intercepting a Skype video call is small now, but may increase over time.

Recommendations

- Skype can be used for clinical video calls.
- Do not send clinical information using Skype text or file transfer.
- Only use Skype for shorter, non-urgent consultations or for emergencies when nothing else is available.
- When Skype is unreliable or if you have concerns about the security of the call, use the telephone for the audio component of the call.
- Install a dedicated broadband connection for telehealth.

Cameras

Some hardware and laptops have their own inbuilt cameras, and for other systems one needs to purchase a separate video camera or webcam. Even with an inbuilt camera, having an external camera adds increased flexibility to a video consultation.

All the video cameras and webcams that one can purchase today collect more information than can be sent through a typical video transmission. The software inside the computer or other device has to cut down the information coming from the camera before sending it on.

Therefore, in general, how good a camera is for video consulting is not about how many pixels it can capture. A good camera will give better video communication because it has a higher quality lens with good autofocus and focal distance, not because it is "high definition".

In telehealth, sometimes a wider angle will be needed to see a family or small group of people, and at other times close up views are needed. Therefore test potential cameras to see if they can fulfill both of these functions.

Network issues

The role of the IT and communications network in telehealth is underappreciated. It is important to think about what type of network environment you are working within, and how this might affect telehealth.

Network environments

There are two basic approaches:

<p>1. Run the whole video communication system inside a network. This is done by large organisations such as government departments.</p>	<p>Advantages</p> <ul style="list-style-type: none"> • Security is taken care of by the network, so the smaller organisations or units inside the network do not have to be experts in the area. • The network can implement quality of service strategies, such as prioritising audio and video communication over other traffic. • The network can give its users a greater degree of interoperability between different devices. This interoperability will still be limited, but will be better than what can be achieved through individual effort. • A network can make a telehealth system easier to use by adding internal directories, bookings and coordination functions. <p>Disadvantages</p> <ul style="list-style-type: none"> • The network can impose limitations on what the people inside it can do, such as prevent access to FaceBook (this could also be seen as an advantage). • The organisations inside the network will need to pay for network services.
<p>2. Have many different local networks that communicate with each other via the internet. This is the current situation in the private and non-government sector.</p>	<p>Advantages</p> <ul style="list-style-type: none"> • Each local organisation has the autonomy to do what they want with their own network. • Things can be changed faster without having to get authority from the network. <p>Disadvantages</p> <ul style="list-style-type: none"> • It is not possible to set quality of service standards on the general internet. • Interoperability is very difficult. • Each local organisation has to put in substantial time, money and effort to run their own network well. • Local expertise can be hard to source.

Combinations of these approaches are possible, such as having a local network for medical records and general IT, but being part of a wider network for video communication.

Security

The first principle of cyber-security is that you should be afraid, very afraid!

There are two reasons for this:

1. No computer or communication system is completely secure. With time, skill and intention even the highest levels of secure systems have been breached, and this is happening all over the world all the time.

2. The inappropriate access and use of health information has the potential to ruin a person's work or personal life. There have been numerous recent instances in the UK where medical records and other clinical information have been obtained by the media and used to threaten individuals (see for example the Leveson inquiry). Fortunately this does not appear to have happened in Australia to date, but it serves as a stark warning as to what can go wrong.

Therefore, assume that your system can be broken into and think about how this risk can be mitigated. The degree of response has to be balanced against the degree of risk. The way to do this involves three main levels, two of which are not about technology.

1. **The information itself.** Consider not having some information on your system in the first place. For example, if the practice has a patient that would be significantly damaged by a breach of privacy, because s/he is in a high profile position, is a celebrity, or is at risk from a murderous relative, then keep their information under a pseudonym.
2. **The people who can access the system.** Do you know exactly how many people know the passwords, when the passwords were last changed, and what information the different types of people in the organisation can access? A disgruntled staff member can do a great deal of damage, and any organisation should consider changing passwords regularly.
3. **The technical components;** these are becoming more widely known, but in essence they are:
 - a) Always use a firewall.
 - b) Always have up to date, good quality anti-virus protection.
 - c) Always lock your wifi.
 - d) Always have some physical security around your IT system, so that an unauthorized person cannot access your router, servers or data.
 - e) Encrypt health data, including telehealth transmissions, when it is being sent outside the organisation.

Some other general principles of cyber-security are:

- Data is only as secure as the weakest link in the system. Do not share information with other organisations if you are concerned about their level of security.
- A system that can be monitored is more secure than one that is left to run itself with no-one watching.
- Information that is stored is much more vulnerable than information that is transmitted once and not stored, because hackers can chip away at your system at their leisure. This is one of the reasons we recommend not recording video consultations. If you do want to make video recordings, rather than keeping them on a server, consider burning them to a disc and keeping them in a locked cupboard.
- In general, being inside a well-run network is more secure than trying to do it all yourself.

Interoperability

Many people promise interoperability, but few deliver it.

The reasons for this are:

- Some systems refuse to interconnect. These are often large ones that are trying to take over the whole market by freezing others out.
- Equipment suppliers are mainly interested in selling equipment. They are unwilling and usually unable to assist with making their equipment work with other systems.
- There are many different technical standards and compliance with these is voluntary.
- Interoperability is often temporary and fragile. Even if it has been achieved between a particular group of systems, when anything is changed in one system, the interoperability is at risk of falling over. Additional time and effort, which many health services do not have, is then needed to re-establish the compatibility.

At the present time, it is unrealistic to expect interoperability. This is a goal to be strived for in the future; it can be approached by requiring standards compliance and/or by greater use of managed networks.

Skype is not interoperable with other solutions, but is so widely used that it has become a default solution enabling most clinicians and patients to connect to each other.

Standards

The Department of Health and Ageing (DoHA) position is that generally the technical standards space caters well for videoconferencing, and that the current technological environment is sufficiently standardised to support delivery of telehealth services under the new MBS rebates. (DoHATelehealth technical standards position paper 2011)

Risk management

Risk management has already been discussed in the **Security** and **Skype** sections of this module.

To summarise the main points already made about risk management, risk mitigation should be commensurate with the level of risk, and should take into account:

- Which information should not be in the system in the first place (e.g. high profile/celebrity patient records)
- Who has access to the system /password management
- Technical safeguards e.g. firewall, anti-virus protection, locking wifi, physical security around IT system, encryption
- Which organisations you are sharing information with
- System monitoring
- Which data is stored and how it is stored
- IT environment e.g. being inside a well-run network

Skype

If you are using non standards-based equipment such as **Skype**, the following risk mitigation measures are recommended:

Quality of service

Make sure the connection bandwidth is as high as possible, and preferentially install a separate broadband connection for video calls.

Try not to use Skype for long consultations. If consultations last for an hour or more there is a significant risk of Skype dropping out at least once over that length of time. If this happens and your only option is Skype then use the telephone for the audio component of the call to maintain a connection with the specialist until the video link is resumed.

If it is likely that video calls will be used regularly for critical or urgent clinical consultations we recommend setting up a more reliable means of video communication.

Security risks of Skype video calls

Our judgment is that it is reasonably safe at the present time to use Skype for video calls,

but that the means of interception and range of organisations able to do this may grow and spread.

Use your own judgment about the sensitivity of the consultation and the risk to the patient if the call is intercepted. If this risk is high, use the telephone for the audio component of the call.

Security risks of sending data through Skype

Do not use the text chat or the file transfer features of Skype for clinical purposes.

Wrong connection

Identify all users before accepting them to your address book.

Never accept anonymous calls. Only accept calls with predefined users who are in your address book.

Start the Skype video call with the patient outside of the camera range, and only bring them in view when the identity of the specialist has been established.

“In terms of ongoing maintenance of the technical requirements, try to build that in to your practice IT systems. That means doing regular checks on the equipment. Depending on the frequency of using the technology, it’s worthwhile doing a check well before a video consult is due. You don’t want to start a video consultation and find out that your internet’s down. It’s important to check your connectivity from time to time, and if you build that in to your quality management system you’ll learn what the reliability of your connection is, and its capacity to handle a video consult. It’s worthwhile doing regular audits – as you would for other systems – of auditing your IT systems to make sure you’ve got everything backed up regularly, and also think about things like fail over. So if you’re doing regular video consults and you’re reliant on your internet connection, you may decide to have a secondary connection with a system to fail over to that should a connection drop out. What you don’t want to do is get into a video consultation with a patient – it might be their first experience – and your internet fails and you haven’t got an alternative. You’ve got to think about redundancy in the systems so you can provide a seamless video consultation to each patient.”

Dr David Allen, Occupational Physician, Sydney NSW

Troubleshooting

This section of the module is also about general principles, rather than detailed advice about individual systems, which vary greatly.

Low bandwidth giving a poor quality call

This is the most common problem. If the bandwidth is too low, the image quality will pixellate, freeze, or crash altogether. This is because too many pixels are trying to go through a limited amount of space on the connection at the same time. Devices called buffers collect stalled information and send it on as soon as space becomes available. For example, one can see the buffer in action when downloading a video from YouTube; the video will not play until the information has been received and put together coherently. This delay is also noticeable when downloading web pages that contain many images or embedded video clips. When doing a one way video download, the only problem is that the viewer has to wait, but for real time video delay is disastrous.

Think about why the bandwidth might be low at that particular time. Remember that the blockage could be anywhere in the system.

If you are in a practice which is operating with one DSL line and one of the staff is searching the web, another is downloading a movie and several are sending emails, then the reason for the problem could be internal. One solution is to request everyone not to do these things while video consultations are occurring, and another is to install a separate line for video communication.

A second reason for poor bandwidth could be that the internet service provider is congested, for example, in the late afternoon or early evening when many people start using their home internet connections. If this is interfering, purchasing more bandwidth or not scheduling video consultations at this time will help.

If it is necessary to run a video consultation despite poor bandwidth, then there are a couple of options which may help:

1. If you can adjust the frame rate of the call, reducing the frame rate will lower the amount of information being sent per second. Frame rates down to about 12 per second are quite adequate for consultations, but below that the quality drop is noticeable; once the frame rate gets below 5 or 6 per second the image becomes very jerky.
2. Try turning off the audio part of the call, by asking both parties to press the mute button, and this will enable all the available bandwidth to be used for the video part of the communication. Then make a telephone call to maintain the audio communication.

Will not function

If the video call will not start or has totally ceased, first check that everything is plugged in, turned on, and all cables are connected. If it still does not work try rebooting your equipment, i.e. turning it off, waiting 10 seconds, and turning it back on again. This is the most popular advice given by IT helpdesks to frustrated users, and quite often it actually does work!

INTERNET SPEED TEST

The upload and download speeds of your internet connection can vary significantly. Use www.speedtest.net to test your speed. You can bookmark this site to monitor your connection speed in the future.

Contextual aspects of telehealth

Physical environment

ACRRM Telehealth Guidelines

3.1 Management of Physical Environment	
3.1.1	The room set-up used for telehealth has: <ul style="list-style-type: none"> 3.1.1.1 adequate physical space to conduct consultations (e.g. assess gait, include family or carers) 3.1.1.2 ensures privacy and comfort (physical and emotional) of the patient 3.1.1.3 allows the equipment to be used effectively (e.g. good lighting, little or no background noise, distance for best use of camera)

Where to conduct video consultations








Video consultations may be conducted in a standard consulting room, or can be set up in a separate space, such as the treatment room.

If possible, choose a room which is not otherwise being used for consultations, so that the video consultations can be booked at a fixed time. This will allow the usual flow of consultations at the practice to continue undisturbed, as well as giving the clinicians more flexibility. For example, the GP can then attend part of the video consultation, but also return to their office to deal with other matters.

Another option is to have the video consulting equipment on a small trolley that can be moved about the practice.

Room set up

Lighting

Brightness	The room needs to be well lit. Normal office fluorescent lighting is usually perfectly adequate. A desk lamp can be used if extra light is needed, but bounce the light off a wall rather than shining it directly at the patient or clinician's face; this will give better quality of light with less glare, and be more comfortable for those involved.
Contrast	Try to avoid large differences in brightness. If the patient sits behind a bright window, they will only be seen as a black outline. To fix this, draw the blinds or close the curtains. <div style="display: flex; justify-content: space-around; margin-top: 10px;">   </div>
Skin tone	Patients with pale skin might have washed out faces if they are wearing black or dark clothes, and for patients with dark skin it might be difficult to see their features if they are wearing white or pale clothes. If this happens, ask the patient to sit closer to the camera so their face takes up most of the screen; this will usually solve that problem. Moving a neutral-coloured screen behind the patient can also help. <div style="display: flex; justify-content: space-around; margin-top: 10px;">      </div>
Clarity and simplicity	Avoid stripes, very busy fabric, a cluttered background, or a lot of rapid movement. The reason for this is that the busier the visual environment is, the more information needs to be sent, and the greater chance that the image will break up. When the bandwidth is only just enough for a consultation, the whole transmission including sound can be affected as well.

Background colour

The best wall or background colour is a neutral pastel, such as beige, pale blue or pale green. This is better than either white or a darker colour because it reduces contrast and improves the quality of the picture. Also avoid stripes or very busy fabric.

If the existing background is not ideal, using a standard moveable screen is a quick and easy way to fix this.

Sound – low noise

Microphones are not as good as human ears at filtering out unwanted sounds, so background noise such as traffic or loud air conditioning will be very prominent. The quieter the room, the better the sound will be.

Making noise near the microphone, for example rustling papers, should be avoided; this can be loud enough to prevent voices from being heard.

An echo cancelling microphone may be a worthwhile purchase.

Field of view

The width of the field of view which can be seen through the camera needs to be checked, particularly when there is more than one person in the room. It may be necessary to place the chairs closer together.

The distant clinician will usually not have a problem with this for just a head and shoulders view, although they may want to use a model or refer to a chart.

Moving the camera around, which could involve turning the screen if it is built into the device, may be necessary.

Privacy

Remember that people participating in a video consultation may need to talk more loudly than usual, so it is important that they cannot be overheard. Particularly when using a room that is not usually a consulting room, use the ACRRM Do Not Disturb Door Hanger on the door.

Chair placement

If more than one person needs to be seen at a time, the chairs will need to be placed close together to fit into the camera range.

Business environment

ACRRM Telehealth Guidelines

3.2 Management of Business Environment	
3.2.1	The health care organisation has implemented telehealth in a planned manner, including: <ul style="list-style-type: none"> 3.2.1.1 developing or utilising a business case i.e. considering the costs, benefits and sustainability of telehealth. 3.2.1.2 consulting with the staff about the workflow and other changes telehealth will introduce. 3.2.1.3 making a formal decision to implement telehealth, and then supporting the changes needed for implementation. 3.2.1.4 assessing the need for staff training or professional development in telehealth, and enabling this to occur. 3.2.1.5 including telehealth in its continuous quality improvement program. 3.2.1.6 ensuring that the telehealth service is covered by insurance and professional indemnity.

MBS telehealth initiative

The MBS telehealth initiative currently provides a number of incentives to encourage participation in telehealth. These incentives are currently scheduled to diminish each financial year, and finish on 30th June 2014.

MBS telehealth incentives

	2011-12	2012-13	2013-14
Telehealth On-Board (one-off)	\$6,000	\$4,800	\$3,900
Telehealth Service (specialist)	\$60	\$48	\$39
Telehealth Service (patient-end)	\$40	\$32	\$26
Telehealth Bulk Billing	\$20	\$16	\$13
RACF On-Board Incentive (one-off)	\$6,000	\$4,800	\$3,900
Telehealth Hosting Service Incentive	\$60	\$48	\$39

The on-board incentive for telehealth will be paid in two instalments. The first is paid after the first valid telehealth MBS claim is processed by the Department of Human Services (DHS) and the second is paid after the tenth valid telehealth MBS claim is processed by DHS.

Patient-end fees

In addition to service incentives and bulk bill incentives, MBS telehealth items have higher fees in recognition of the time and complexity of the service.

Telehealth

Item	Time Based General Attendance Item Descriptors	Medicare Fee	
2100	Level A	Telehealth attendance at consulting rooms	\$22.05
2126	Level B		\$48.05
2143	Level C		\$93.20
2195	Level D		\$137.10
2122	Level A	Telehealth attendance other than at consulting rooms	Derived fee % patients seen
2137	Level B		
2147	Level C		
2199	Level D		
2125	Level A	Telehealth attendance at a Residential Aged Care Facility	Derived fee % patients seen
2138	Level B		
2179	Level C		
2220	Level D		

Example – GP

Example of fees reimbursed for each 15 minute video consultation with a specialist when a GP is present at the patient end (for the 2012-2013 financial year):

Telehealth Item	Medicare Fee	
2126	Telehealth attendance at consulting rooms < 20mins	\$48.05
Auto	Telehealth service incentive, paid quarterly	\$32.00
Auto	Telehealth bulk billing incentive, paid quarterly	\$16.00
	Total	\$96.05

Example – Practice nurse/Aboriginal health worker

Example of fees reimbursed for each 15 minute video consultation with a specialist when a practice nurse or Aboriginal health worker acts as the GP's deputy (for the 2012–2013 financial year):

Telehealth Item		Medicare Fee
10983	Telehealth support service on behalf of a medical practitioner	\$31.80
Auto	Telehealth service incentive, paid quarterly	\$32.00
Auto	Telehealth bulk billing incentive, paid quarterly	\$16.00
	Total	\$79.80

Health service business case for telehealth

Because the lead time to the availability of MBS benefits is short, in the immediate short-term, a pragmatic approach to implementation which makes use of readily available, off-the-shelf technical options is required, accepting that these options may not be the best fit to all of the requirements of telehealth. By implication, this will impact on the type of telehealth interactions that can be recommended as sufficiently safe, effective, secure and private in the short-term. In the medium-term, allowing for development time and experience with the short-term implementation, a solution for sustainable pervasive video consultation can be achieved. The implementation of telehealth video consultations should be seen as an iterative process that will require a number of years of gestation before maturity will be reached (Uniquist Business Case 2011).

Business considerations include:

- Number of doctors willing to use telehealth at your practice
- Number of telehealth consultations likely to occur per month
- Percentage of consultations likely to be deputised to a practice nurse or Aboriginal health worker
- Quality of internet connectivity, cost of upgrades
- Cost of telehealth equipment, including maintenance and upgrades
- Cost of room set-up
- Impact of workflow modifications, development of policies and procedures, staff training
- Scalability of telehealth service
- Outreach services and mobile considerations
- Synergistic benefits – education and training, case conferences
- MBS incentives and rebates, including expiry dates

Case study – Business case

Dr Smith is a GP in a three doctor practice who is experimenting with using telehealth in his practice. He is circumspect about the fiscal efficiencies of such a model and as such is closely monitoring the business impact of utilising this methodology.

He is finding that a significant cost is that of lost time waiting for a hook up. It is turning out to be quite challenging to get a good time to actually have the teleconference. His preferred time is 9am or 2pm. He has done a few of these with a vascular surgeon who seems to do a whole lot on one morning. He was given a time of 10:40 am, but he wasn't ready then. They then had a series of phone calls to their staff, and rescheduled for 11:30. He had to then readjust his list to be OK for the new time. Overall it was messy, and lost consulting time for him and probably at the Brisbane end.

A minor but significant cost is the extra work that the dedicated receptionist had to do to set a consultation up: preliminary phone call to the patient and Brisbane to set it up. A phone call three days out, and test the equipment. A phone call on the day, and possibly test the equipment then be on standby as the consult starts (both to ring and troubleshoot, and troubleshoot the equipment our end).

So why do it?

Even with all these seemingly negative points, the outcomes, both clinical and fiscal have actually been in the positive.

Let's look at why:

Number one: The patient was seen by a specialist she would not normally have had access to.

Number Two: The GP was able to charge the appropriate telehealth MBS item and a gap fee. These items allow for the administration time spent organising and administering the consultation. Whilst in the past the GP would have bulk billed them, he is now going to charge a gap, as there are big financial advantages for the patient.

Number Three: Each time the practice conducts these consultations the system will improve. This may be an opportunity for a mini PDSA cycle within your practice.

Now refer to the business model developed by ACRRM (on the next page) to further explore your ability to conduct telehealth consultations in a financially viable way.

The case for bulk billing

Some practices may choose to have a policy to bulk bill for telehealth – either for all patients, or for health card holders. The business case for this is assisted by the availability of the “bulk billing incentive” provided by Medicare. The financial planning tool provided by ACRRM can assist practices to assess the business case for this scenario, taking into account the bulk billing incentive and the volume based incentives.

Of interest: If the specialist is also bulk billing, the general practice can ask the patient to sign a bulk billing slip for the specialist as well as for their own clinician, at the end of the consultation, and send them both to Medicare. This is a courtesy that the general practice may choose to do for the specialist.

ACRRM financial model for telehealth

ACRRM has developed a financial modeling tool to help GPs analyse the business case for telehealth at their practice. This tool is available to participants who enrol in the free RRME0 module. The explanatory guide is included as Appendix 7 of this document.

Resources

Financial Model for Telehealth Explanatory Guide – see Appendix 7

Telehealth Financial Model Primary Care Practice – available via the RRME0 online module

Change management

The successful implementation of a telehealth service is largely about effective change management.

Telehealth introduces many changes, notably:

- new technology such as video conferencing equipment and peripheral devices
- new relationships between clinicians who may have never collaborated on patient care, let alone virtually
- new workflows and care paradigms such as making clinical care recommendations without being in the same room as the patient, raising concerns about liability and treatment control
- new responsibilities for clinicians and support staff, when they need to take time away from other responsibilities to establish new working protocols or participate in video consultations
- New costs for technology, and other operational support (Desai 2011)

The introduction of telehealth can easily get bogged down as people try to deal with all the changes required.

There is a common misconception that people do not like change. The reality is that people do not like having change thrust upon them. People seek out change for the right reasons – as long as there is a perceived benefit and they are involved in the decision.

Make a point to get early involvement from key people that will be involved in supporting or leading the implementation of the telehealth initiative.

“We use our conventional practice systems. We see telehealth as just a different medium for delivering the consultation, so we still keep our records the same way as we do with face-to-face, we seek the same consent, and we give the same advice. We spend a bit more time on it, but we try to mimic face-to-face practice as much as possible. I think that’s the general message for doctors out there – you don’t need to have special systems, you should try to work with your current practice management systems. That includes making appointments; try not to invent a new appointments system just to do telehealth consults because that’s got to work at both ends, the specialist end and the patient end.”

– Dr David Allen, Occupational Physician, Sydney NSW

“We prepared for the MBS telehealth initiative by researching some of the technical and administrative requirements that were needed to set up this type of service. We went through ACRRM for advice on videoconferencing services, we also spent a fair bit of time with MBS, looking at the website to see the items and the requirements for registering for these initiatives. Basically we’ve chosen standards and created solutions to look at how best we can ensure the security and the quality of the images. It’s very important that our infrastructure is in place prior to embarking on this.”

“The next pathway for us was to engage with our staff, and also engaging with the specialists and GPs to ensure that we all have a common understanding of how the video consultation is going to take place, how it’s best going to be served for residential care here, and also to limit the disruptions to the GPs’ and specialists’ daily routines.”

– Richard Fahy, CEO, Orana Lutheran Complex, Kingaroy QLD

Strategies for successful implementation

Adding video consultations to the range of services offered at a practice or health service can improve patient access to specialists, support clinical staff and enhance continuity of care. However, as with most changes to practice, some advance planning will make it run much more smoothly.

Getting started

We suggest starting small and keeping it simple.

- Begin with one clinical discipline and straightforward consultations, such as routine follow up or pre-operative checkups.
- Set aside time for clinical and administrative staff to do some training in telehealth. ACRRM has a variety of online modules.
- Get help from ACRRM, your own college, from NACCHO, or your Medicare Local.

“To make it all happen initially we had to find specialists that were keen to come on board, and I think being rural and remote, the group of doctors looks at things perhaps a bit differently. To attend an appointment is a whole day in Melbourne or at least half a day in the nearest rural towns which are Wangaratta and Albury-Wodonga. So the specialists were also keen to come on board. I think it was just a matter of discussing with those people who were interested, to see if we could do it and how difficult it was to achieve.”

“The catalyst for us getting into telehealth was having some local people that had broken their arms and we knew they had to attend fracture clinic in Wangaratta. Now fracture clinic is everybody turning up at the same time and waiting their turn to be seen, it’s a very busy clinic run in outpatients at Wangaratta Hospital. Thankfully we have very good rapport with the orthopaedic surgeons in Wangaratta as they see a lot of our patients that come down from Mt Hotham. So initially that was the discussion between that group, and our GP saying ‘What can we do? Are you interested?’ and them saying ‘We’d like to give it a go because it sounds like it could work in this situation.’”

“So the first person had a broken arm, they’d been and had it set in Wangaratta, they were due to go to the clinic, and from there the specialist was happy to ‘Skype in’ with the GP here, and they were able to discuss that child’s progress with an x-ray that had been taken the day before at the local hospital, both the specialist and the doctor could see the x-ray whilst the patient was in the room, and it was just like a normal consultation.”

– Gillian Jones, Practice Manager, Bright Medical Centre, Bright VIC

Resources

ACRRM telehealth support form and personalised assistance
www.ehealth.acrrm.org.au/telehealth-support-form

The ACRRM requirements analysis form may help you think about some of the issues involved in setting up a telehealth service. It includes a speed test for your internet connection. Once you have completed the form, ACRRM can provide you with personalised one-on-one assistance to help you and your nominated specialists set up a telehealth service for your patients in consultation with your Medicare Local support officer or specialist college telehealth support officer.

Clarify your purpose

Given the well documented challenges involved in implementing a sustainable telehealth service (Moffatt & Eley 2011, Desai 2011, Broens et al 2007) it’s worth spending some time clarifying the purpose of your telehealth service.

Your short-term purpose may be different from your long-term purpose, as participation in telehealth increases and supporting infrastructure matures.

For many rural GPs the most significant factor determining purpose may be the availability of telehealth-enabled specialists. For others, the needs of specific patients may drive the initial implementation of a telehealth service.

For example, your main start-up purpose might be:

- To improve continuity of care for particular conditions/diseases
- To improve quality of care via shared care arrangements for particular conditions/diseases
- To reduce dislocation for particular groups of patients
- To provide initial consultations/triage before transferring a patient to an urban centre, or before the arrival of a visiting specialist
- To perform follow-up consultations in order to improve continuity of care.

“My first experience with telehealth was when I was working in Tamworth. The availability of video linking and telehealth was just beginning. It was through requests from the nursing staff at Moree Hospital because they were concerned about this patient who was depressed and had expressed suicidal thoughts. We had to decide whether we would bring him in on an involuntary treatment order, or he could be managed by the GP in Moree Hospital. So we attempted a video link at that time. Those initial efforts could be very difficult technologically, because not only was the picture not very clear, the most difficult problem was with the sound. But we managed, and I was satisfied that the suicide risk was low and we decided to treat the patient in Moree Hospital with a good outcome.”

– Dr Edward Tan, Psychiatrist, Toowoomba Hospital QLD

“One of our main issues is that we have limited access to specialist care. Being a little bit more remote, Orana in Kingaroy has access issues in terms of gerontologists, skin care, cancer care and oncology. We cannot necessarily get those specialist appointments when we need them, and we see telehealth solutions as one of the tools to overcome these issues, and reducing some of those geographic boundaries we are dealing with at the moment. I really believe this will be the next step in more fluid and high quality care for our residents.”

– Richard Fahy, CEO, Orana Lutheran Complex, Kingaroy QLD

“When a patient has an injury at Mt Hotham ski resort – usually a broken limb that needs to be fixed or repaired surgically – we normally ring the consultant and tee up the appointment. Now there is a bit of double handling there because we’ve already seen the patient at Mt Hotham, assessed them, triaged them, and maybe even started their treatment. The next stage of their treatment is to go straight to the operating room and be fixed, but because of the difficulty of taking someone straight to the operating room without ever having met them, the consultants usually like the patients to have an appointment. So they have to go back to Melbourne a day early to have an appointment with the consultant on his appointment day which might be Monday or Tuesday for an operating day on the Thursday. With telehealth we envisage them having their first consultation with the consultant by video link, so they will already have met the consultant, been told what’s going on, been verbally consented, been advised what is going to happen in the procedure, they can wait until the allotted day to go to Melbourne the day before their surgery, rather than 3 days before. At least 100 patients [per year] will be able to have their first consultation with the consultant by video link.”

– Dr Paul Duff, GP, Bright Medical Centre, Bright VIC

Determine which patients benefit most

The greatest advantage of telehealth, in the short term, rests with rural and remote patients and practitioners. Financial savings will occur primarily to patients rather than health services. The advantages are amplified for people with chronic illness or disability (*Uniquest Business Case 2011*).

Telehealth has particular relevance for aged care, disaster situations, individual clinician support and for team-based support for complex conditions. As such, telehealth in Australia is ideally placed to support major national programs associated with dementia, mental health, diabetes and regional concerns related to rehabilitation, acute waiting list relief and outpatient support (*ANCCEH 2011*).

Other strategies

- Compare short-term v. long-term implementation
- Assess equipment solutions and infrastructure requirements
- Implement an effective change management process, including the development of practice protocols
- Delegate to a practice nurse or Aboriginal health worker within your practice when appropriate
- Implement internal evaluation strategies

Logistical environment

ACRRM Telehealth Guidelines

3.3 Management of Logistical Environment	
3.3.1	The health care organisation has a system for coordinating and booking the people, equipment and space needed for telehealth.
3.3.2	The telehealth equipment is accessible when needed, to ensure continuity of care.

Bookings

Practice staff need to know which consultations will be by telehealth, so that they can book the room, the equipment, the clinician with the patient, and the distant clinician as a single event.

Some telehealth facilitated solutions incorporate booking facilities.

Allocation of time

Particularly when first getting started, video consultations are likely to take more time than an in-person consultation. Most of this extra time is needed at the beginning, to check the operation of the video link, that the patient is positioned in a good place, and that everyone can hear adequately. Therefore ask the patient to arrive about 10 minutes before the video call commences, and allow for at least the first 5 minutes of the consultation to be taken up with adjustments to things like sound, lighting or positioning. This extra time will decrease with experience and familiarity with equipment.

Running on time

When there are two clinicians in different locations, it is important to start the video consultation on time. This can sometimes be difficult because of the daily press of work, as well as urgent situations which can arise at any time. If the GP is planning to attend the video consultation, have another staff member such as a practice nurse available to take over if the GP is running late or must attend to an emergency.

Billing

Telehealth is unique in that two clinicians can receive a Medicare rebate for seeing the patient at the same time. Details of the item numbers are available from the MBS website.

With the patient

The clinician with the patient will bill the patient in the same way that the practice does for any other service. There are unique item numbers for telehealth which attract a higher rebate than for an equivalent in-person consultation. At present there are additional incentive payments, plus a bulk billing incentive, which are also paid into the bank account registered against the practitioner.

The distant specialist

The distant specialist can send the patient a bill by post, which the patient can pay and then obtain a rebate.

Alternatively, if the specialist wishes to bulk bill, there are three options. The first one involves the referring practice assisting, and the other two do not.

1. The clinician with the patient can complete the assignment of benefit form on the specialist's behalf, ask the patient to sign it, and the practice sends it to Medicare.
2. The specialist sends the assignment of benefit form to the patient, who signs it and forwards it to Medicare.
3. The specialist can obtain an email agreement: the specialist sends an email to the patient with details of the service, and the patient replies agreeing to assign the benefit.

Resources

ACRRM Telehealth Guidelines See Appendix 1

ACRRM eHealth website www.ehealth.acrrm.org.au

ACRRM Telehealth Provider Directory www.ehealth.acrrm.org.au/provider-directory

ACRRM Telehealth Technology Directory www.ehealth.acrrm.org.au/technology-directory

ACRRM Telehealth Patient Information Sheet See Appendix 2

ACRRM Telehealth Patient Consent Form See Appendix 3

ACRRM Do Not Disturb Door Hanger Contact ACRRM for your copy

ACRRM Telehealth Letter for GPs to Send to Specialists See Appendix 4

ACRRM Telehealth Patient Evaluation Form See Appendix 5

ACRRM Telehealth Audit See Appendix 6

ACRRM Financial Model for Telehealth Explanatory Guide See Appendix 7

MBS Telehealth Initiative www.mbsonline.gov.au/telehealth

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Appendices

Appendix 1 – ACRRM Telehealth Guidelines

ATHAC Telehealth Standards Framework ACRRM Telehealth Guidelines

Scope of this document

These guidelines apply to:

- Conducting synchronous (real time) video consultations between a patient, a health care provider from the referring organisation, and a specialist medical practitioner to whom the patient has been referred.
- General practices, Aboriginal medical services, and primary care providers. These guidelines do not:
- Apply to direct specialist to patient video consultations, with no involvement of the referring clinician or their practice staff.
- Contain clinical advice on the effectiveness of telehealth for different medical conditions.

Purpose

The purpose of the ATHAC Telehealth Standards Framework is to provide health and medical colleges, clinicians and health care organisations with a common approach to the development of craft specific guidelines to assist members in the establishment of quality telehealth services.

ACRRM has applied these draft standards to establish generic guidelines for general practice and primary care facilities (with an emphasis on rural and remote context.) The purpose of the ACRRM Telehealth Guidelines is to interpret and apply the ATHAC Telehealth Standards Framework to the context of the medical speciality of rural and remote general practice in Australia.

Background

Standards for telehealth proliferate. Telehealth is a means of delivering healthcare across many different clinical settings. One set of standards or guidelines cannot cover all of these in detail, therefore ACRRM has chosen to establish a framework which relevant craft groups or clinical disciplines in Australia can use to develop profession and health- organisation specific telehealth guidelines. This approach was endorsed by the ACRRM Telehealth Advisory Committee (ATHAC) which includes representatives from medical specialist and nursing colleges and organisations, peak Aboriginal health organisations, consumer organisations, the National Rural Health Alliance, the Rural Doctors Association of Australia, Standards Australia, the Australasian Telehealth Society, and the Royal Flying Doctor Service.

The ATHAC Telehealth Standards Framework provides the architecture for telehealth guideline development. ACRRM has

partnered with the National Aboriginal Community Controlled Health Organisation, the Royal Australasian College of Surgeons and the Royal Australasian College of Physicians to apply this Standards Framework in the development of their specific telehealth guidelines.

The ATHAC Telehealth Standards Framework also forms the basis for the organisation of content and resources for the online telehealth modules developed by ACRRM for telehealth clinicians including; GPs, staff working in Aboriginal community controlled health services, rural generalists, surgeons and physicians. These modules are hosted on ACRRMs online tele-education platform 'Rural and Remote Medical Education Online'.

This work has been funded by the Australian Government Department of Health and Ageing.

Methodology

ACRRM undertook a scan of Australian guidelines and standards, which were also considered in the design of the Framework. The ATHAC Telehealth Standards Framework is referenced to:

- The ISO draft technical specifications Health Informatics – Quality criteria for services and systems for telehealth (ISO DTS 13131) (2012), using the framework and systematic approach to customisation described in that document.
- The AHPRA Guidelines for Technology-based Patient Consultations (2012)
- ACRRM Core Principles for Telehealth (2011)
- DoHA Guidance on Technical Issues (2012)

The Framework has been synthesized from a variety of sources including:

- ISO draft technical specifications Health Informatics – Quality criteria for services and systems for telehealth (ISO DTS 13131) (2012)
- AHPRA Guidelines for Technology-based Patient Consultations (2012)
- ACRRM Core Principles for Telehealth (2011)
- DoHA Guidance on Technical Issues (2012)
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 - ACRRM International Review of Telehealth Standards (2012)
 - Australian Medical Associations (AMA) Guidelines (2006)
 - American Telemedicine Association (ATA) Core Standards for Telemedicine Operations (2007)

- RACGP Standards for general practices offering video consultations (2011)
- Defence Update MDA National Risk Management for Telemedicine Providers (Autumn 2006)
- Wade VA, Eliot JA, Hiller JE. A qualitative study of ethical, medico-legal and clinical governance matters in Australian telehealth services Journal of Telemedicine and Telecare (2012) 1-6
- ACRRM eHealth staff
- ATHAC Chair Dr Jeff Ayton
- ATHAC Members
- ACRRM TeleHealth clinical review panel

1. CLINICAL ASPECTS OF TELEHEALTH		ISO/TS 13131:2014 number	APHRA guideline number
1.1	Informing the Patient about Telehealth		
1.1.1	The patient has easy access to plain language information about telehealth, plus the other relevant options for providing care.	11.4	5
1.1.2	The patient is informed about the role of each person who is involved in delivering their care by telehealth.	11.8	3
1.1.3	The patient is informed that standards-based systems are used to protect their privacy and data security, but total protection cannot be guaranteed. If non standards-based systems are used, then the patient is informed about any additional risks to quality, reliability or security.		5
1.1.4	The patient is informed if there will be out-of-pocket charges for telehealth consultations, compared to other available options.	11.5	
1.1.5	The patient should know how and where to make a complaint about the telehealth service. <i>Resources</i> <ul style="list-style-type: none"> • ACRRM Telehealth Patient Information Sheet • Mitigating risk when using Skype and other non-standards based products in provision of telehealth services • ACRRM Telehealth Online Module <i>References</i> <ul style="list-style-type: none"> • Department of Health and Ageing Patient Questions and Answers 	11.8	
1.2	Seeking Patient Consent		
1.2.1	The patient gives informed consent to the use of telehealth. This may be verbally or in writing. If the telehealth consultation is going to be recorded, or if the type of care is substantively different to usual care, then consent should be taken in writing. ACRRM recommends that the consultation not be recorded, except for education/assessment purposes, and ONLY when written permission is obtained. <i>Resources</i> <ul style="list-style-type: none"> • ACRRM Telehealth Informed Consent Form • ACRRM Telehealth Online Module 	11.3	1
1.3	Selecting Appropriate Patients for Telehealth		
1.3.1	The health care organisation has a set of criteria about which patients are suitable for telehealth.	11.6	2
1.3.2	The patient and/or their informal care provider need to be able and willing to participate in care by telehealth.	11.7	

1. CLINICAL ASPECTS OF TELEHEALTH		ISO/TS 13131:2014 number	APHRA guideline number
1.3.3	<p>The decision to use telehealth takes into account:</p> <p>1.3.3.1 Clinical factors such as continuity of care, shared care, and the best model of care for the individual patient.</p> <p>1.3.3.2 Practical factors such as the availability of specialists, local clinical staff and technology.</p> <p>1.3.3.3 Patient factors such as the ability of the patient to travel, plus their family, work and cultural situation. (<i>see ACRRM ARTS Framework</i>)</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Organising Telehealth in Your Practice • ACRRM ARTS Framework • Department of Health and Ageing Program Overview • ACRRM Telehealth Online Module 	8.2, 8.3 and 11.6	
1.4	Using Telehealth in Delivering Care		
	Conducting the Consultation		
1.4.1	The role of telehealth in the overall management of the patient is determined. For example, is telehealth for a one- off assessment or for regular follow up?	10.3	
1.4.2	If there are any limitations from using telehealth, these are noted and reduced as far as possible.	10.6	
1.4.3	The referring health care provider confirms the identity of the patient to the distant specialist or health service, and confirms the identity and credentials of the distant specialist to the patient.	14.3	4
1.4.4	The reasonable length of time needed to deliver care by telehealth is determined, and the patient informed about his.	8.4	
1.4.5	A health care provider from the referring health care organisation is present with the patient for some or all of the video consultation with the specialist.		
1.4.6	Telehealth should be delivered using evidence-based guidelines where possible. Where these do not apply, a framework of best fit for clinical purpose should be used, such as the ACRRM ARTS Framework.	10.3	
1.4.7	<p>The patient's privacy is protected by considering what risks there are to privacy when using telehealth, and developing procedures to manage privacy.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACCRM How to Conduct a Video Consultation • ACRRM ARTS Framework • ACRRM Telehealth Online Module <p><i>References</i></p> <ul style="list-style-type: none"> • RANZCP Position Statement #44 Telepsychiatry (see Appendix 1: Quality Practice Guidelines for Telepsychiatry) 	12.2 and 12.3	1

1.	CLINICAL ASPECTS OF TELEHEALTH	ISO/TS 13131:2014 number	APHRA guideline number
1.4.8	<p>Relationships with Other Providers</p> <p>Protocols exist about the way health care providers collaborate with each other when using telehealth. These protocols include:</p> <p>1.4.8.1 A method for choosing the best referral pathway. Telehealth has greatly expanded referral options, so the referring provider needs to consider issues such as how to avoid fragmentation of care, and the availability of the specialist for an in-person consultation if required.</p> <p>1.4.8.2 A telehealth referral database (see ACRRM Telehealth Provider Directory).</p> <p>1.4.8.3 A description of how the care is delivered, including any changes to the usual roles of health care providers.</p> <p>1.4.8.4 A description of who delivers which aspect of care, including who takes responsibility for ordering tests, writing scripts, and follow up.</p> <p>1.4.8.5 A protocol for how the consultation should be noted. If two health care providers are consulting with the patient at the same time, ACRRM recommends they should each keep their own notes on their own record systems.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Telehealth Provider Directory • ACRRM Organising Telehealth in Your Practice • ACRRM Telehealth Online Module 	8.2, 10.2, 10.7 and 11.8	9, 10, 11
1.5	Skills of Practitioners		
1.5.1	<p>There are criteria for the skills the health care provider should have to use telehealth.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Primary Curriculum Statement 6.8 Information Technology/ Information Management • ACRRM Telehealth Online Module 	9.2	
1.6	Evaluating the Use of Telehealth		
1.6.1	<p><i>Individual</i></p> <p>After their first use of telehealth, the patient should be asked for an evaluation of the experience. If the patient is making long term use of telehealth, this evaluation should be repeated at regular intervals or if warranted by a change in the patient's condition.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Telehealth Patient Evaluation Form • ACRRM Telehealth Online Module 	11.4	
1.6.2	<p><i>Organisational</i></p> <p>At suitable intervals of time, the health care organisation evaluates the usefulness of telehealth across the organisation as a whole, and makes decisions about the continuing range and volume of telehealth used by the organisation.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Telehealth Evaluation Framework • ACRRM Telehealth Online Module 	6.7, 6.8 and 11.7	

2	TECHNICAL ASPECTS OF TELEHEALTH	ISO/TS 13131:2014 number	APHRA guideline number
2.1	Adequate Performance		
2.1.1	<p>The information and communications technology used for telehealth is fit for the clinical purpose.</p> <p>Specifically:</p> <p>2.1.1.1 The equipment works reliably and well over the locally available network and bandwidth.</p> <p>2.1.1.2 The equipment is compatible with the equipment used at the other telehealth sites.</p> <p>2.1.1.3 All the health care organisations participating in the teleconsultation, plus the network or other means of connection, meet the standards required for security of storage and transmission of health information.</p> <p>2.1.1.4 Peripheral devices are used in a fit-for-purpose manner jointly determined by the patient-end clinician and the distant specialist.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Telehealth Technical Overview • ACRRM Telehealth Technology Directory • ACRRM Advice on mitigating risk when using Skype to provide telehealth services • ACRRM Interpretative Guide to DoHA Guidelines • ACRRM Trouble Shooting Guide • ACRRM Telehealth Online Module • References Department of Health and Ageing Guidance on Technical Issues • Department of Health and Ageing Guidance on Security and Privacy 	13.4 and 14.4	
2.2	Commissioning of Equipment		
2.2.1	The equipment is installed according to the proprietary product guidelines, where possible in collaboration with the other organisations/clinicians using the telehealth system.	13.5	
2.2.2	<p>The equipment and connectivity are tested jointly by the participating health care organisations to ensure that they do what the producer claims that they will.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Trouble Shooting Guide • ACRRM Telehealth Technology Directory 	13.5	
2.3	Risk Management		
2.3.1	A risk analysis is performed to determine the likelihood and magnitude of foreseeable problems.	6.5 and 13.2	
2.3.2	There are procedures for detecting, diagnosing and fixing equipment problems.	13.2	
2.3.3	Technical support services are available during the times the equipment will be operating.	13.3	
2.3.4	<p>There is a back-up plan to cope with equipment or connectivity failure, which is proportionate to the consequences of failure. For non-urgent consultations, rescheduling or completing by telephone may be sufficient. If urgent work is likely to be undertaken by telehealth, consider installing an uninterruptible power supply and a second source of connectivity.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Trouble Shooting guide • ACRRM Telehealth Online Module 	10.4 and 13.3	

3 CONTEXTUAL ASPECTS OF TELEHEALTH		ISO/TS 13131:2014 number	APHRA guideline number
3.1	Management of Physical Environment		
3.1.1	<p>The room set-up used for telehealth has:</p> <p>3.1.1.1 adequate physical space to conduct consultations (e.g. assess gait, include family or carers)</p> <p>3.1.1.2 ensures privacy and comfort (physical and emotional) of the patient</p> <p>3.1.1.3 allows the equipment to be used effectively (e.g. good lighting, little or no background noise, distance for best use of camera)</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM How to Conduct a Video Consultation • ACRRM Telehealth Do Not Disturb Door Hanger • ACRRM Telehealth Online Module 	12.2 and 12.3	
3.2	Management of Business Environment		
3.2.1	<p>The health care organisation has implemented telehealth in a planned manner, including:</p> <p>3.2.1.1 developing or utilising a business case i.e. considering the costs, benefits and sustainability of telehealth.</p> <p>3.2.1.2 consulting with the staff about the workflow and other changes telehealth will introduce.</p> <p>3.2.1.3 making a formal decision to implement telehealth, and then supporting the changes needed for implementation.</p> <p>3.2.1.4 assessing the need for staff training or professional development in telehealth, and enabling this to occur.</p> <p>3.2.1.5 including telehealth in its continuous quality improvement program.</p> <p>3.2.1.6 ensuring that the telehealth service is covered by insurance and professional indemnity.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Telehealth Financial Model for Primary Care Practice and Explanatory Guide • ACRRM Telehealth Online Module 	6.2 to 6.8, 7.2, 9.2 and 9.3	
3.3	Management of Logistical Environment		
3.3.1	<p>The health care organisation has a system for coordinating and booking the people, equipment and space needed for telehealth.</p> <p><i>Resources</i></p> <ul style="list-style-type: none"> • ACRRM Organising Telehealth in Your Practice 	14.6	
3.3.2	The telehealth equipment is accessible when needed, to ensure continuity of care.	8.3, 10.4, 13.2 and 13.3	

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Version 05/16

Appendix 2 – ACRRM Telehealth Patient Information Sheet

Patient Information Sheet

Your TeleHealth Appointment

Your doctor has made an appointment for you to see a specialist who is not located near you.

You will meet using videoconference technology to connect you both so that you will not have to leave your home community. This will reduce the time, cost and stress associated with travelling to an appointment.

Your Privacy is Important...

Your doctor knows that your personal health information is important to you and must be protected. Personal health information is any information that can identify you and link you to health care services you receive. Your doctor uses your personal health information when referring you to a specialist for your telehealth consultation. Your doctor will not give this information to anyone other than those involved in your care without your approval, unless required to do so by law.

By agreeing to a telehealth consultation, you give permission to your doctor to release the relevant aspects of your personal health information to those involved with your care. You can withdraw your permission at any time before or even during your telehealth appointment.

Your doctor uses a variety of physical, administrative and technical methods to protect your personal health information.

You have the right to see your personal health information and to ask that your doctor make corrections if the information is inaccurate or incomplete.

What is a TeleHealth visit?

Telehealth uses video cameras and monitors to connect you to specialists who are not located near you, reducing the need to travel to receive care. You will be able to see, hear and talk to a doctor or other health care professional.

How does a TeleHealth visit work?

A telemedicine appointment is just like a normal appointment; only the specialist you will be seeing and speaking with is on a monitor. Before you arrive, the specialist you are going to see will already have relevant information about you to support your telehealth. However, you may be asked to bring test results, medications or x-rays with you. Your Doctor or a nurse or an Aboriginal Health worker will be with you during your consultation. The videoconference connection is made with the specialist at a different location and the consult begins.

The health care professional with you may assist with the examination, using tele-diagnostic equipment like a digital stethoscope, otoscope or patient examination camera. The specialist on the monitor can hear your heartbeat and breathing and look into your ear, nose and/or throat as if they were sitting in the same room.

Is there a cost for a telemedicine appointment?

Medicare provides a rebate to your doctor for telehealth consultation – just like a normal consultation. However, your GP may require a fee above the Medicare rebate – this fee will need to be paid in the normal way.

In addition, the Specialist that you are 'seeing' by telehealth technology will also receive a Medicare rebate for the consultation. If your Specialist charges above the Medicare rebate, then you will need to pay the extra cost for this visit.

Ask the practice manager for details.

Is telehealth private?

Just like a normal doctor's appointment, your Telehealth visit will be private and confidential. It can only be seen and heard by the health care professionals involved. If you have any questions, please speak to your health care professional.

ACRRM TeleHealth support www.ehealth.acrrm.org.au

Appendix 3 – ACRRM Telehealth Patient Consent Form

Seeking Consent for Telehealth

ACRRM Advice on Consent for Video Consultations

Video consultations are still new to most patients, so all patients should be given the ACRRM Telehealth Patient Information Sheet or other clear explanation, and then asked for their consent.

This consent could be either verbal or written; if you wish to take written consent a form has been provided overleaf for your use.

If the video consultation is not recorded, then verbal consent is usually adequate. ACRRM recommends that if you record any aspect of a video consultation (including taking still images) that you obtain written consent. An additional section at the bottom of the Consent Form is provided for this.

Our rationale for this advice is based on these principles:

The 3 Principles of Informed Consent

1. The patient needs to be given the information.
2. The patient needs to understand the information. This means that the information has to be at a suitable level for understanding, and that the patient should have time to read it, and/or the opportunity to speak with an appropriate person.
3. The patient needs to make a choice. This choice can be revisited by the patient at any time.

Types of Consent

Written: to be used where there are significant risks, such as operations and procedures. If the risk is very high, it may also be appropriate to give the patient a test to make sure they have genuinely understood the information.

Verbal: to be used for low risk situations, such as unrecorded video consultations.

Implied: to be used in routine situations which are already well understood by patients, such as a standard visit to a doctor.

Almost everyone knows this will involve a history, possibly a physical examination, and that the doctor will keep notes, including exchanging information with specialists and test providers. Therefore the patient is not formally asked if they agree to these things.

However, the health care provider needs to be alert for individual patients that do not have this general understanding, for cultural or other reasons, and then move to actively seek consent.

Waiver of consent: see the ARTS framework for the in-principle understanding that there are circumstances where preservation of life or health takes priority over the usual consent process.

Content of Informed Consent

Consent should cover these areas:

- possible risks
- possible benefits
- safeguards
- alternative

Video Consultation Informed Consent Form

The benefits of having a video consultation can be:

- Reducing the waiting time to see a specialist or other distant service
- Avoiding your need to travel to the specialist or distant service
- Assisting your local health service to better look after you

I know that I might not get all these benefits.

The risks of having a video consultation can be:

- A video consultation will not be exactly the same, and may not be as complete as a face-to-face service.
- There could be some technical problems that affect the video visit.
- This health care service uses systems that meet recommended standards to protect the privacy and security of the video visits. However, the service cannot guarantee total protection against hacking or tapping into the video visit by outsiders. This risk is small, but it does exist.

If the video visit does not achieve everything that is needed, then I will be given a choice about what to do next. This could include a follow up face-to-face visit, or a second video visit.

I can change my mind and stop using video consultations at any time, including in the middle of a video visit. This will not make any difference to my right to ask for and receive health care.

I agree to have video consultations with _____
(*name of doctor, other health care provider, or service*)

Name of Patient _____

Signature of Patient _____ Date _____

Additional Consent for Recording Video or Images

I agree to have this video consultation recorded, or to have photographs taken. This material will be sent and stored securely and only used to benefit my health care.

I have the right to see the video or images, and to receive a copy for a reasonable fee. I understand that the service cannot guarantee total protection against hacking or tapping into the recording by outsiders.

Signature of Patient

Appendix 4 – Letter for GPs to send to specialists

Dear

Our practice has established a telehealth service to enable some of our patients requiring specialist advice and care, to link with their relevant specialist to conduct a consultation via video conferencing when appropriate. We organise this from our practice consulting rooms and I, or one of my clinical practice staff, can accompany the patient when we link to you.

This will not replace all visits but there are some circumstances in which this is an appropriate means of consultation and has significant benefits to patients – especially the frail and those with children and pressing commitments at home.

The MBS telehealth initiative enables both ends of the consultation (our patient-end and your distant end) to bill Medicare. There are also financial incentives provided for this information can be found on the ACRRM and DOHA website. Some specialists are already providing this service; video clips of video consultations between GP, patient and specialist are available on the ACRRM eHealth website <http://www.ehealth.acrrm.org.au/telehealth-education>

Telehealth is not suitable for all consultations; however, it is ideal for patient review and advice in shared care arrangements. It saves patients and specialist's time and effort in travelling many kilometres to attend a consultation and increases patient's access to specialists care. We see the provision of telehealth services as an important part of our care for our community and an extension of our professional relationship and referral pathway. We would like to establish a telehealth relationship with you for our existing patients and if appropriate new patient referrals. The selection of patients for telehealth consultations/face to face consultations would be done in consultation with you. The actual referral would still be done in the normal way and if a telehealth consultation were required then we would indicate in the referral that this would be a preferred option.

Telehealth arrangements can be established when both parties agree to work together. We use [insert name of video conferencing equipment/software] to connect with specialists, and if you are interested in exploring this further then we are happy to assist in getting the link established.

ACRRM is also working with specialist colleges to provide additional assistance, please contact them (or get your practice manager to contact them) for personalised assistance in getting established (this is a free service) see <http://www.acrrm.ehealth.org.au>.

I am available to discuss arrangements and processes with you further and I hope that we are able to establish a telehealth services with you.

Yours Sincerely

For your interest if you are prepared to provide telehealth service then ACCRRM can assist your staff to create an entry in the Telehealth Provider Directory (screen shot of Provider Directory from eHealth website below)

The screenshot shows the ACRRM eHealth Provider Directory website. The main content area features a table of providers with columns for Provider Name, TeleHealth role, Location, and State. A sidebar on the left allows for refining results by discipline, and a top navigation bar includes links for Home, Committees/Forum, Contact, and Provider. A search bar is also present in the top right.

Provider Name	TeleHealth role	Location	State
AllSpeech Speech Pathology	Patient end practitioner	PADDINGTON	QLD
Alexandra Park Medical Centre	Patient end practitioner	BUNDABERG	QLD
Ann Street Family Practice	Patient end practitioner	HAMBUR	QLD
Arayngal Health Aboriginal Corporation	Patient end practitioner	TEHANT CREEK	NT
Anywhere Health, Inc	Specialist end practitioner	MELBOURNE	VIC
Apollo Bay General Practice	Patient end practitioner	APOLLO BAY	VIC
AESA	Specialist end practitioner	ADELAIDE	SA
Aparima Cape York Health Council	Specialist end practitioner	CAIRNS	QLD
Assoc. Prof Angela Turner	Specialist end practitioner	PERTH	WA
Assoc. Prof Ananth Yazzari	Specialist end practitioner	BRISBANE	QLD
Assoc. Prof Bernhardt Reed	Specialist end practitioner	MELBOURNE	VIC
Assoc. Prof Brian Chambers	Specialist end practitioner	MELBOURNE	VIC
Assoc. Prof Craig Lynch	Specialist end practitioner	RICHMOND	VIC
Assoc. Prof David Fonda	Specialist end practitioner	MALVERN	VIC
Assoc. Prof David Hewitt	Specialist end practitioner	PADDINGTON	QLD

Screen grab from directory, can be searched/filtered by Name, Discipline, State, Medicare Local.

Appendix 5 – ACRRM Patient Evaluation Form

Video Consultation - Patient Evaluation Questionnaire

Date

Thank you for participating in our survey, it will only take a few minutes of your time. We would like your feedback to help us improve our video consultations into the future.

Please rate the following statements by ticking the appropriate box that applies to you. There is no right or wrong answers, so please be honest.

1. My doctors' reasons for proposing a video consultation rather than a face-to-face consultation were clearly explained to me.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

2. The benefits and risks of video consultations were clearly explained to me.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

3. I was given a choice about whether I wanted to have a video consultation or not.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

4. I understood the role of each person involved in the video consultation.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

5. I was told about the privacy and confidentiality of a video consultation. I am comfortable that my privacy and confidentiality were protected.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

6. I felt comfortable in the video consultation room.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

7. I was able to see the specialist clearly.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

8. I was able to hear the specialist clearly.

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

9. The video consultation was convenient for me

<input type="checkbox"/> Strongly disagree	<input type="checkbox"/> Disagree	<input type="checkbox"/> Neutral	<input type="checkbox"/> Agree	<input type="checkbox"/> Strongly agree	<input type="checkbox"/> Not applicable
--	-----------------------------------	----------------------------------	--------------------------------	---	---

If the video consultation was convenient, please let us know how, by ticking the boxes that apply to you.

Saved me time

Saved me travel costs

Saved me time off work

Other: (please clarify) _____

10. I would be willing to participate in another video consultation if my doctor recommended it.

Strongly disagree

Disagree

Neutral

Agree

Strongly agree

Not applicable

Did you have any problems with the video consultation service?

Do you have any suggestions for improvements to our video consultation service?

Thank you for taking the time to complete this questionnaire.

Appendix 6 – ACRRM Telehealth Audit

ACRRM Telehealth Audit: Optimising the use of telehealth in rural and remote general practice

Telehealth can help to deliver healthcare across a variety of clinical settings.

Conducting real time video consultations between patients, health care providers and specialists can be particularly beneficial for patients living in rural and remote areas where distance and other factors limit mobility. Patients who are very frail, or who have responsibilities that restrict their ability to travel for specialist appointments can benefit from telehealth services.

About this audit

Why participate in this audit?

Video consultations can have enormous benefits for patients in certain circumstances, but are relatively new for most practices. This audit reflects the ACRRM Telehealth Advisory Committee (ATHAC) Telehealth Standards Framework, which provides a common approach for clinicians at both ends of the consultation to establish quality telehealth services.

Participation in this audit will help your practice optimise video consultation services by assessing whether activities undertaken were in accordance with telehealth standards and guidelines as reflected in the ATHAC Telehealth Standards Framework. This Framework incorporates AHPRA guidelines, ISO guidelines and quality indicators, ACRRM core principles for telehealth, and is congruent with telehealth guidelines incorporated by the RACGP in general practice accreditation standards.

Participants who complete this audit will receive 30 PRPD Points from ACRRM.

Patient selection

Identify 10 patients as they present, or from a search of your medical records, who participated in a video consultation with a distant specialist.

Patient details

Patient code (*do not use patient's name*) _____

1. Age

- 0-10 years 11 – 20 years 21-30 Years 31-40 years
 41-50 years 51-60 years 61-70 years 71 years or older

2. Gender

- Female Male

3. Nationality _____

4. Primary language spoken at home

- English Other:

5. Did any cultural or linguistic issues impact on this video consultation?

- No Yes (specify): _____

Suitability for telehealth

6. Work/family situation (mark all that apply)

- Employed Parent responsibilities Carer responsibilities Not known
 Other (specify): _____

7. Patient mobility

- Patient can travel independently Patient cannot travel independently

8. Estimated round trip travel time for patient to attend face-to-face consultation

- Half a day or less One day Two days Three days or more Not known

9. Main factors influencing decision to use video consultation for this consultation (*please rank in order that is applicable to you*)

- Physical ability of patient to travel to appointment
 Distance for patient to travel to appointment
 To reduce waiting time for specialist appointment

- Family/work/cultural situation of patient
- To enhance continuity of care by involving the generalist/primary care providers in the specialist consultation in order to better manage the patient in their community for as long as is effective for the patient.
- To establish/enhance shared care arrangement between the specialist and the generalist in the care of the patient in their home community.
- The use of video conferencing was consistent with the model of care and telehealth protocols established by this practice.
- Others: _____
- Not known

10. Type of information provided to patient about telehealth prior to the consultation.

- Written information
- Graphic/audio-visual information
- Verbal information
- Other: _____
- Not known

11. Type of consent obtained from the patient prior to the video consultation

- Verbal
- Written
- Implied
- None (*explain circumstances*)

Consultation information

12. Was your choice of specialist limited by the medium of telehealth? (*Tick all that apply*)

The specialist to whom you referred this patient for a telehealth consultation is:

- this patient usual specialist e.g. has seen this patient face –to–face
- not my usual referral specialist but was selected specifically because they provided telehealth services in the required discipline
- visits the town in which I practice
- located in the town in which I practice
- Other (please explain): _____

13. Was the specialist you referred to your first choice? (e.g. was your first/usual choice of specialist prepared to offer a telehealth consultation).

- Yes
- No

If no, then how did you find a specialist prepared to conduct a telehealth consultation:

14. Primary clinical area of the consulting specialist (*specify*)

15. The use of telehealth in the patient's management is intended to be:

- One-off assessment Ongoing Other: _____

16. What was the main purpose of the telehealth consultation?

- Assessment Diagnosis Treatment Management
 Monitoring Pre/post operative follow-up Other: _____

17. Duration of telehealth consultation

- 0-10 mins 10-20 mins 20+ Not known

18. Briefly describe the location within the practice of the video consultation:

19. Briefly describe the video conferencing equipment that was used for the consultation:

20. What type of internet connection do you have?

- ADSL (Digital Services Line) ADSL2 Mobile Broadband: 3G 4G
 Satellite Connection ISDN (Integrated Digital Services Network)
 Coaxial Cable Fibreoptic Cable

21. I used a dedicated line internet connection for this consultation

- Yes No

22. I installed a business grade connection for this consultation

- Yes No

23. The equipment and any peripherals devices used were:

- | | | |
|---|------------------------------|-----------------------------|
| Reliable and worked well over the locally available network and bandwidth | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Compatible with the equipment used at the other telehealth sites | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Of the standard required for security of storage and transmission of health information | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Fit-for-purpose | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

If you answered no to any of the above questions, briefly explain why: _____

24. The room set up used for the consultation:

- | | | |
|--|------------------------------|-----------------------------|
| Was an adequate physical space | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Ensured privacy and comfort of the patient | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Allowed the equipment to be used effectively | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

If you answered no to any of the above questions, briefly explain why: _____

25. As an identification measure, was the name of the patient, and the names and credentials of all present medical staff, confirmed at the beginning of the consultation?

- Yes Not known No (explain circumstances) _____

26. Were any of the following processes problematic or unsuccessful?

- | | | |
|---|------------------------------|-----------------------------|
| Locating a specialist | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Scheduling the appointment at both ends | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Patient and specialist attendance at the consultation | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| Appointment occurring on time | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

If you answered yes to any of the above questions, briefly explain why: _____

27. Total number of participants in the video consultation (including specialist & patient)

- Three More than three (specify): _____

28. Profession of clinical staff member from the referring organisation who was present during the consultation

GP Practice Nurse Aboriginal Health Worker

Other: _____

Evaluation

29. Was the patient given the opportunity to provide feedback about the video consultation?

Yes No Not known

30. If yes, was the patient's evaluation of the video consultation

Positive Negative Neutral

31. Was the consulting specialist given the opportunity to provide feedback about the video consultation?

Yes No Not known

32. If yes, was the consulting specialist's evaluation of the video consultation

Positive Negative Neutral

33. Did the clinical practice staff member who attended the video consultation provide feedback?

Yes No Not known

34. If yes, was the attending clinical practice staff member's evaluation of the video consultation

Positive Negative Neutral

At the completion of your 10 patient audit

35. As a result of your experience in telehealth thus far, your practice has or is in the process of:

- developing or utilising a business case, considering the costs, benefits and sustainability of telehealth.
- consulting with the staff about the workflow and other changes telehealth introduces.
- supporting the changes needed for implementation of telehealth.
- assessing the need for staff training or professional development in telehealth
- enabling this training to occur
- including telehealth in your continuous quality improvement program.
- developing a system for coordinating and booking the people, equipment and space needed for telehealth.
- None of the above (*explain*): _____

Participant details

- GP GP Registrar Other (*specify*) _____
- Title: _____
- Family Name: _____
- Given Name: _____
- Postal Address: _____
- Town or Suburb: _____
- State/Territory: _____
- Postcode: _____
- Email: _____
- Phone: _____
- Fax: _____
- ACRRM # _____

Appendix 7 – ACRRM Telehealth Financial Model – Explanatory Guide

ACRRM Business Case for Telehealth

Developing a business case for telehealth

This business case is about the use of video consultations by general practices and Aboriginal Health Services. It does not cover specialist medical services or telehealth direct to the home.

The business case is in two parts:

A. Financial Model

The MBS telehealth item numbers mean that conducting eligible video consultations will bring income into the practice or service.

We have constructed a financial model in the attached Excel spreadsheet to help you determine the financial costs versus income of implementing telehealth.

First read the instruction guide, then put your own figures into the spreadsheet, and the income or loss will appear at the bottom of the sheet. Local conditions will vary, so we cannot guarantee this is a perfect model of the real world; it is a simple but hopefully useful tool to help you with your decision.

B. Non-Financial Factors

Having done the sums, it is also important to consider the other, non-financial reasons why practices or services might choose to take up telehealth, such as:

- improving access to care and health outcomes for patients
- providing specialized advice and support to clinicians
- reducing professional isolation, hence assisting with staff retention
- telehealth fitting in with the future directions and potential opportunities seen by the practice or service

These cannot be expressed in dollars, but should be taken into account to decide, overall, if it is worth implementing telehealth in your general practice or health care service. If these are important, then a break-even or some loss might be acceptable for the additional benefits that are gained.

Longer Term Implications

Also consider the possible longer term effects of taking up telehealth: it could result in an absolute increase in patient attendances at your organisation, because patients who would otherwise see a specialist on their own will now be seeing them in conjunction with local staff. Do you have the capacity to do this within your existing space or resources? Consider that if this becomes a substantive aspect of the work of the practice, additional nursing or Aboriginal health worker time may be needed.

Instructions for Using the Spreadsheet

Save the original spreadsheet and make a copy to play with for your own service.

Income

1. The yellow cells have been filled in with the current MBS rebates and telehealth incentive payments. Only change these when the rebates and payments alter.
2. The orange cells are data from your practice. The spreadsheet has been filled in with some typical numbers, but you should place the data from your own practice in these. If you do not know the exact amounts, make an educated guess.
3. Pink cell K14 is the average GP income per hour, calculated from the data about percentages and length of the usual attendance item numbers. Some practices may have more accurate data for this figure, based on a broader mix of item numbers and some procedural work; if you have this then put that figure in this cell instead.

A financial model is only as good as the assumptions that go into it. This model makes the following assumptions:

- Neither the On-Board payment nor the costs involved in room set-up or equipment installation are included. This is because these are both one-off events, and this model is intended to look at the sustainability of telehealth over time.
- The GP is fully booked. Hence the GP telehealth consultation substitutes for an in-person consultation, and only the difference between an in-person consultation and the telehealth consultation is counted as additional income to the health care service.
- The nurse, AHW or nurse practitioner income from telehealth items is all counted as additional income to the health care service. This is because the service is regarded as paying for their salaries whether or not they are assisting with telehealth consultations.
- If telehealth consultations take the GP extra time to set up or wrap up, which cannot be billed, this time comes off the hourly income, which the GP could otherwise be bringing in to the service. Put the number of extra minutes taken in Orange Cell B40. This is the GP Efficiency Loss factor, which will hopefully go down as the practice gets greater experience with telehealth.

Costs

This part of the model is much simpler.

1. Additional connectivity is strongly recommended to improve the quality of video consultations. The cost per month will vary according to location.
2. If you have bought equipment, divide the total costs by the number of months until it should be replaced. Usually this would be somewhere between 3 to 5 years, ie 36 to 60 months. Or if you have an annual software license, divide this cost by 12 to get your monthly cost.
3. If you have a GP enthusiast who is doing the technical support him or herself, then the cost per hour of tech support equals the GP income per hour in cell K15.

Practice Nurse or Aboriginal Health Worker

Fill in the orange cells with their hourly rate, number of hours per week and the on-cost percentage. The on-cost percentage should cover superannuation, WorkCover levy, payroll tax (if applicable), the cost of other staff time for supervision, and infrastructure, such as room and computer. 20% is typical but you may have more accurate data for your own practice.

The Results:

Pink Cell B 63 is the financial effect of telehealth on the practice (monthly income minus costs).

Pink Cell B 65 shows what proportion of a practice nurse or Aboriginal health worker the income from their telehealth MBS items will support.

The variable in this model that makes the most difference is the monthly volume of telehealth consultations. Try out some different scenarios yourself.

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