Video-Based Telehealth: Current and Potential Use of Videoconsultation by Allied Health Professionals

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Introduction

Many Australians have limited access to healthcare because of barriers including geographic distance and restricted mobility. Video-based telehealth (videoconsultation, a form of videoconferencing) is an important approach to reducing access inequalities. It is generally not intended to replace face-to-face (FTF) consultations across the board but to improve access when there are barriers.

Videoconsultation is being used innovatively by many allied health professionals (AHPs), but there is relatively little published research about this. Most telehealth research has focused on medical specialist consultations, particularly between specialists in tertiary hospitals and doctors in regional hospitals.

Method

We undertook a literature review of AHP use of videoconsultation, searching the academic and grey literature in early 2013.[1]

Figure1. Speech pathologist

Results

The evidence for AHP videoconsultation is relatively sparse and weak, often focusing on feasibility and/or performance of technologies, or validation of video-based assessment compared with established FTF assessment. Outcome measures are often limited to patient and/or health professional satisfaction.

Few studies have rigorously investigated clinical effectiveness, and even fewer have investigated cost-effectiveness. Evidence has generally been limited by short follow-up periods and reliance on surrogate outcomes (e.g. blood glucose levels rather than diabetes complications). Other methodological problems include small sample sizes, non-randomisation, and lack of control groups. Interpretation of evidence is complicated by the fact that AHPs are often part of multidisciplinary teams, and videoconsultation is often part of multi-strategy interventions.

There is better evidence for some AHPs (e.g. speech pathologists and psychologists) than others (e.g. dietitians and midwives). Evidence (of varying strengths) supports the following clinical applications:

Audiologists

- Hearing screening/assessment
- Hearing aid fitting/programming
- Cochlear implant programming

Figure 2. Physiotherapist

Diabetes educators

- Control of blood glucose and blood pressure (e.g. see IDEATel case study in box)
- Insulin injection technique education

IDEATel (Informatics for Diabetes Education and Telemedicine) RCT[2]

- New York City and rural upstate New York
- Diabetes educators (dietitians and nurses)
- 1,665 diabetic Medicare patients aged 55+ living in federally designated medically underserved areas
- Patients randomised to usual care or home telemedicine units providing scheduled televisits (every 4–6 weeks), plus remote transmission of blood pressure and blood glucose data
- 5-year follow-up: significant improvements in blood glucose, blood pressure and cholesterol
- Significant improvement in diabetes self-care activities
- Patients particularly valued the emphasis on monitoring of health outcomes and supportive contact with IDEATel staff
- Primary care providers also positive about the video-intervention

Dietitians

- Control of blood glucose, blood pressure, cholesterol
- Parenteral nutrition

Midwives

- Postnatal parental support
- Breastfeeding support (lactation consultants)
- Diagnosis of congenital fetal abnormalities

Nurse practitioners

- Management of diabetes
- Assessment and management of school children with diverse problems including otitis media and upper respiratory tract infections
- Follow-up management of transplant recipients

Occupational therapists

- Assessment of elderly people's independent living skills
- Wheelchair seating assessment and adjustment
- Preoperative joint replacement education
- Early intervention rehabilitation for children in rural communities

Physiotherapists

- Rehabilitation in elderly people following stroke, knee arthroplasty
- Pulmonary rehabilitation
- Wheelchair seating assessment and adjustment

Psychologists

- Treatment of common mental disorders, particularly with cognitive behaviour therapy

Speech pathologists

- Assessment/treatment of speech/voice disorders
- Assessment of dysphagia (difficulty swallowing)

Figure 3. Physiotherapist

There is little or no evidence for the use of videoconsultation by podiatrists, chiropractors, optometrists, orthoptists, osteopaths, and exercise physiologists.

Overall, studies revealed few significant differences compared with FTF consultations. Patient satisfaction is generally relatively high. There is some evidence of cost-savings, particularly in terms of travel for patients and their families.

Practical problems identified include prohibitive equipment costs and inadequate internet bandwidth, but new technologies and infrastructure are improving feasibility and affordability.

Despite the weak evidence base currently, there are grounds for optimism about the potential value of AHP videoconsultation, particularly in rural/remote regions. There is also increasing recognition of the value of videoconsultation in primary health care settings,[3,4] where many AHPs work.[5]

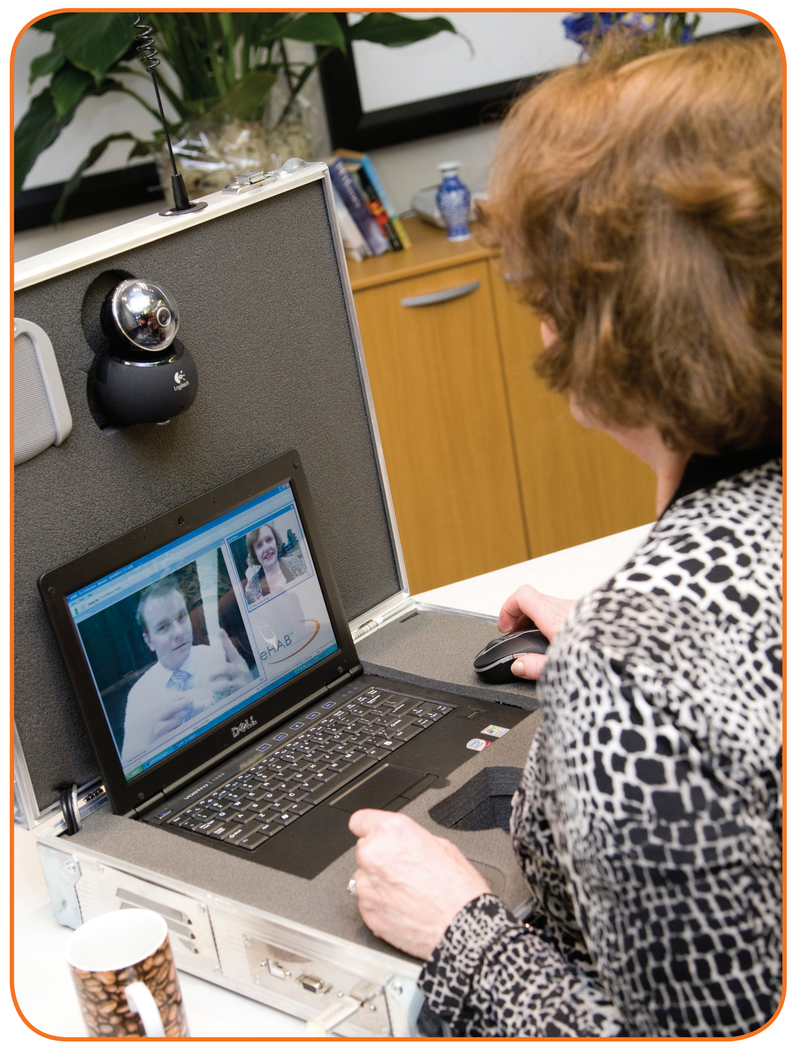

Figure 4. Physiotherapist

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