



The future of allied healthcare delivery

Telehealth for children with complex needs
A mixed method Systematic Review
Preliminary Findings

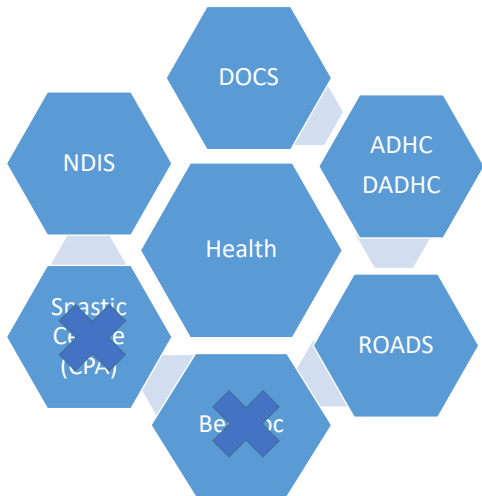
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Local Rural Allied Health Service Provision (last 21 yrs)



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Challenges for paediatric allied health service delivery in Rural areas

- Resources are limited
- Geographical size
- Acute versus chronic care
- Allied health workforce shortages exist
- Aging rural workforce
- At risk population – often underserved
- FIFO and DIDO may not build local capacity
- NDIS – fragmentation of care
- Communication important for complex cases

Health care communication for a child with complex needs

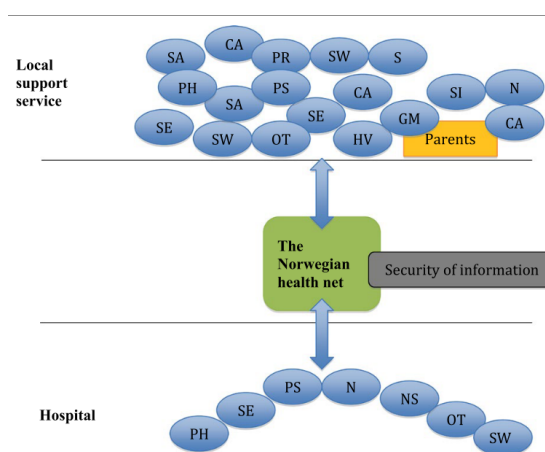


FIGURE 1 Videoconference between the multidisciplinary team in the tertiary health service and the child's local support service. CA: childcare assistant; G: grandmother; HV: health visitor; N: neurologist; NS: nurse specialist; OT: occupational therapist; PH: physiotherapist; PR: school principal; PS: psychologist/psychological service; S: social worker; SA: school assistant; SE: special educator; SI: sibling [Colour figure]

Tschamper and Jacobsen (2018)

Policy

From APA Board (September 2019)

“Access to physiotherapy in rural and remote areas was a strong theme across all meetings and there is growing desire to fund telehealth as a mechanism to improve access.”

Phil Calvert
APA National President



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Telehealth –What do we know ?

- **Opportunity** for improvement in rural health service provision for children with complex needs exists (Hussain and Tait 2015)
- **Unrealised** potential to address allied health needs of rural Australians (Iacono, Stagg et al. 2016)
- **Exponential** increase in services reported in literature since 2000 (Bradford and Smith 2016)
- Most telehealth allied health **research** in fields using **cognitive** approaches (Speyer, Denman et al. 2018)
- **Benefits** (Moffatt and Eley 2010)
- **Barriers** (Scott Kruse, Karem et al. 2018, Mozer, Bradford et al. 2015)
- **Centralised coordination** in a **tertiary hospital** associated with an increase in the **scope** and telehealth **activity** of the hospital (Martin-Khan, Fatehi et al. 2015).
- Many excellent telehealth services **not reported in the published literature**



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Telehealth Clinical Practice Guide (26/09/2019)

- ACI

Telehealth in practice



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Aim of Systematic Review

To determine if telehealth can be used as an adjunct to traditional models of care to improve allied health service provision in a rural health care setting for children.

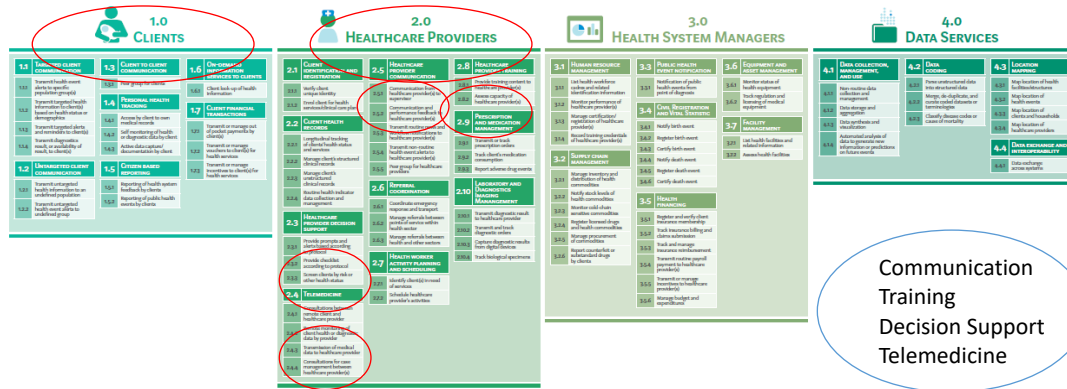
A Mixed Method Systematic Review

Questions: In community dwelling children (0-18yrs) with stable physical conditions

What is the evidence for telehealth to support allied health interventions versus allied health interventions alone?

What are the lived experiences of carers and clinicians towards telehealth service provision?

Definition: Telemedicine = Telehealth



Classification of digital health interventions. Geneva: World Health Organization; 2018(WHO/RHR/18.06). Licence: CC BY-NC-SA 3.0 IGO.

WHO

RECOMMENDATION AND JUSTIFICATION/REMARKS

CLIENT-TO-PROVIDER TELEMEDICINE (Recommended only in specific contexts or conditions)	RECOMMENDATION 4
<p>WHO recommends client-to-provider telemedicine:</p> <ul style="list-style-type: none"> under the condition that it complements, rather than replaces, face-to-face delivery of health services; and in settings where patient safety, privacy, traceability, accountability and security can be monitored. <p>In this context, monitoring includes the establishment standard operating procedures that describe protocols for ensuring patient consent, data protection and storage, and verifying health worker licenses and credentials.</p>	
<p>JUSTIFICATION/REMARKS</p> <p>The guideline development group (GDG) felt that despite the mixed available evidence on effectiveness spanning a wide range of health conditions client-to-provider telemedicine has the potential to expand access to health services. It may also potentially reduce the burden of travel and decrease inequities for populations that have difficulties in accessing health services through conventional approaches.</p> <ul style="list-style-type: none"> This recommendation recognizes that while telemedicine may enhance access to health services, it should not be used to replace or detract from efforts to strengthen the health workforce. The establishment of standard operating procedures and mechanisms to ensure patient safety, privacy, traceability and accountability of services was deemed to be a necessary condition to mitigate the potential risks and harms of implementing this recommendation. 	

WHO (2019). World Health Organisation Guideline: Recommendations on digital interventions for health system strengthening. Geneva.

Working Definition: Telehealth

- ✓ “live, audio and or/video interactive links for clinical consultations and educational sessions
- ✓ Store and forward telehealth-this model may involve digital images, video, audio and clinical data being captured (“stored”) on the client computer; then at a convenient time transmitted securely (“forwarded”) to a clinic at another location where they are studied by relevant specialists
- teleradiology for remote reporting and clinical advice for diagnostic images
- telehealth services and equipment to monitor people’s health in their home”
- (Centre for Online Health, 2019)



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Mixed Method

Protocol lodged with Prospero

PICOS

Population	Children and Adolescents <18 yrs and their parents/carers Allied health clinicians of children adolescents
Intervention /Issue	Telemedicine or telehealth plus allied health
Comparison	Allied health alone or usual care
Outcome	Health outcome-all measures related to quality of life, pain, function, Enablers and Barriers
Studies	Client and clinician attitudes and beliefs Quantitative studies (RCT, quasi, pre-experimental, observational and case-studies); Excludes systematic reviews

PICoS

Population	Children and Adolescents <18 yrs and their parents/carers Allied health clinicians of children and adolescents
Phenomenon of Interest	This review will consider interpretative studies that explore clinician and carer experiences with modalities of service provision provided by telehealth.
Context	This review will consider studies that are conducted in Australia/globally. This review will include children and families from all multicultural groups.
Studies	Qualitative descriptive studies, Qualitative case studies, Qualitative content analysis containing Interviews, Observations, Field Work, Case study Exclude quantitative literature and systematic reviews



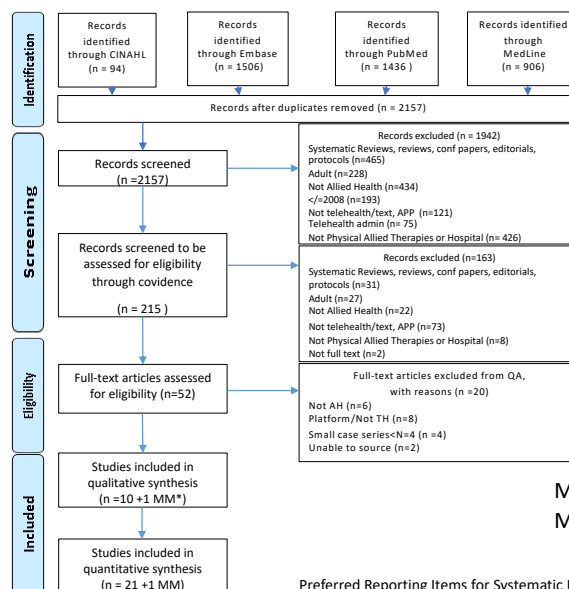
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Allied health definition modified after step one of SR (n=2157)

- A: Psychologists and social worker –good evidence for CBT, mhealth apps, counselling via Telemedicine
- B: medical radiation practitioners, optometrists, audiologist– require specialised equipment to provide assessment and intervention
- C: Pharmacists, Chinese medicine practitioners, chiropractors, osteopath-work outside public health system or administer medication
- D: Dietitians, Exercise physiologists, occupational therapists, physiotherapists, podiatrists, and speech pathologists

PRISMA



Methodological quality
MMAT (Hong et, al 2018)

Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement

Exclusion criteria

- Psychology, Social Work, Medical and Nursing only, Pharmacy, Dental,
- Platforms, APPs, Web based interventions alone, SMS, messaging
- Small studies <5 participants ;
- Only reviewed studies after 2009
- Excluded reviews, conference presentations, not peer reviewed, reviews, commentary's, opinion pieces
- Not English

Demographics of included studies N=32 (+1)

Type	RCT	Non-RCT	Quant Descriptive	Qual	Total
N	6	7	8	10	32 (+1)
Australia	1	3	6	10	19 (+1)
Other	USA (5)	USA (3) SA(1)	USA (2) Mex(1)	Norway (1)	13
Rural	3	3	8	9	23
Participants study N	20-103	5-1,331	5-1,331 13*	5-54	
Ages (yrs)	3-14	2.5-7	3-14	<24-65*	*Adults
Discipline	Speech (4)	Speech (7)	Speech (6)	Speech (6)	23
	Diet (2)		PT (1)	OT (1)	4
			Multidisc (2)	Multidisc (4)	6

Results –Quantitative (n=21 +1)

RCT: (6)

Telehealth (TH) vs Standard Care (SC)

- Small RCTs of which randomisation poorly reported in some studies
- Tx effect in **speech** independent of service delivery
- Tx effect in **weight management**

Non RCT (7) and Quant descript: (n =8 +1)

- No difference between TH **speech therapy** and **face to face (SC)**
- Concurrent **validity** MABC TH vs SC
- Autism Spectrum Disorder assessment interrater **reliability** TH vs SC
- Studies reported **feasibility, satisfaction** and positive **capacity building** with telehealth interventions



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Results –Qualitative (n=10+1)

- Semi-structured interviews
- **Good quality** using thematic analysis with independent reviewers
- Evaluated effectiveness, satisfaction and feasibility of telehealth services from **stakeholder** perspective (carer, clinician, teacher, allied health, TA)
- Overall **many** themes reported
 - Successful Teletherapy
 - Barriers/Disadvantages
 - Positive Attitudes /Acceptability
 - Advantages



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Themes reported

Successful Teletherapy requires

- Staff training and collaboration with families
- Allocation of time for set up and preparation of service
- Communication with stakeholders important

Positive Attitudes /Acceptability

- Telehealth was easier than normal therapy
- Practical and convenient
- A way of meeting “unmet need” and value adding to Standard Care
- Efficient for information exchange



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Themes reported

Barriers/Disadvantages

- Technical difficulties
- Importance of face to face service prior to remote sessions- emotional distance with screen
- Staff changes

Advantages

- Upskilling of parents and local providers
- Reduced cost, travel and time
- Enhanced connections
- Increased choice and access for rural families
- Patient centred



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Summary–Preliminary Findings

- Telehealth effective to assess and deliver **Speech therapy** to remote sites
- Telehealth may have potential to support **diagnosis in children with ASD**
- **Limited research PT/OT** assessments and intervention for children
- Most studies PT/OT were evaluating **technology, APPs, Platforms, (or Adult)**
- Stakeholders in general report **positive experiences** with the telehealth services reported in study
- **Increased workload** highlighted as a **challenge** for telehealth service delivery and set up.



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Considerations

- No studies included in search in “store forward and video assessments”
- Only looked at Peer reviewed literature
- Studies looking at coaching only, Apps, web based interventions, platforms were outside the scope of this review.
- Further synthesis of findings will occur



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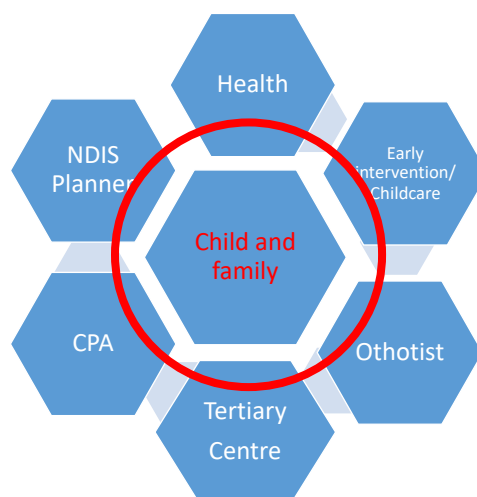
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Conclusion

Research is needed to **inform, plan and design** models of allied health care to **support** children, families and clinicians in their **natural** environment.

Improved communication amongst stakeholders and **improved access to services** for families have been identified as a positive outcome of telehealth to support allied health interventions.

Family Centred Care



Telehealth-Improved communication and collaboration

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