



2019

21-23 JUNE

SAN FRANCISCO

SUPPORTIVE CARE
MAKES EXCELLENT
CANCER CARE POSSIBLE

Teleoncology – Ian Olver



MASCC/ISOO

Annual Meeting on Supportive Care in Cancer

www.mascc.org/meeting

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MASCC
Multinational Association
of Supportive Care in Cancer

ISOO
INTERNATIONAL SOCIETY
of ORAL ONCOLOGY



#MASCC19

Usage of teleoncology

- **Teleoncology delivers oncological services at a distance.**
 - Remotely supervise chemotherapy administration
 - Remote planning of radiotherapy and telesurgery.
 - Monitor physical and psychological symptoms
 - Supplements experts for remote multidisciplinary meetings
 - Teleradiology and telepathology, telegenetics
 - Genetic counselling
 - Skin and eye examinations can occur by transmitting images
 - Clinical trials



Aims of Teleoncology

- The aims of the use of teleoncology include:
 - reduce rural and remote disparities in cancer outcomes, including with indigenous patients.
 - service of low-income countries which lack specialist expertise.
 - support peer interaction and education of remote practitioners and trainees
 - provides an avenue for remote patients being able to access a second opinion.
 - Reduce travel for both patients and practitioners and this is the source of much of the cost savings



Mobile Health

- Enables home health follow up
- Wearable devices can monitor vital signs
- Often linked to Smartphone Apps





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Evaluation of a Telemedicine Link Between Darwin and Adelaide to Facilitate Cancer Management

Olver et al Telemedicine 2000, 6:213-8

- Survey 20 health professional and 8 patients
- Isolated clinicians feel better supported
- Filled gaps in Multidisciplinary team (RT)
- Decreased patient and practitioner travel
- Enhanced education and peer review
- Patients satisfied by better range of opinions





Lesson from Teleoncology Trials

- Grass roots need
- Dedicated room to make facilities accessible
- “Champion” at either end
- Should not interfere with usual practice (e.g. pathology) store and forward
- Training on the technology
- Ethics, billing and governance issues were not barriers



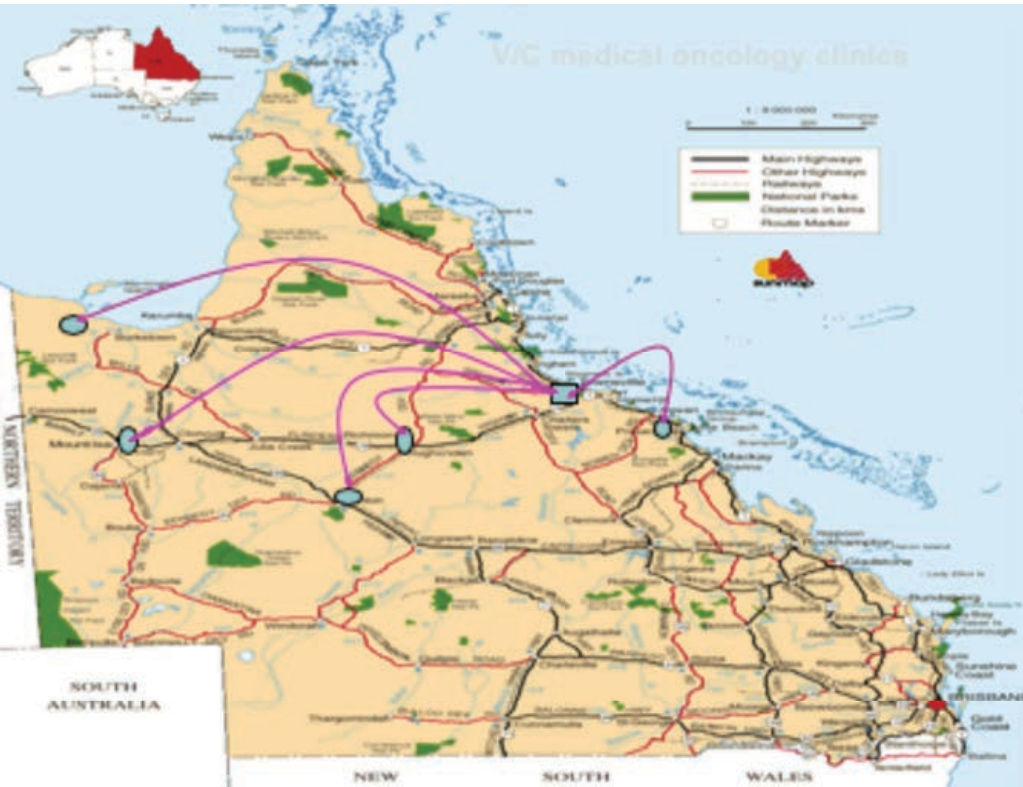
Is Teleoncology Effective and Cost Effective?

- Both clinical and cost effectiveness have been shown *Doolittle GC et al J Telemed Telcare 1997,3:63-70*
- Calculate in Kansas that the cost of a telemedicine consultation was 10% lower than an outreach clinic



Cost effectiveness

Thaker DA, Monypenny R, Olver I, Sabesan S. Med J Aust 2013, 6: 414-417.



Area with shortage of workforce, long distances and rough terrain, with 200-300 thousand people

5 Satellite centres from Townsville with regular weekly consultations plus urgent referrals

2 centres can give IV the others oral chemo



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Cost Calculation

- Crowe's model was used to calculate cost.
(Crowe BL. Cost-effectiveness analysis of Telemedicine. J Telemed & Telecare. 1998; 4: Supp.1: 14-17)
- Included project establishment, equipment, maintenance, communication, staffing



COST OF TELE HEALTH PROJECT

Type of cost	Cost per centre	Cost for all centres for three years	Total
Project establishment	6000	6000 X 6	36,000
Equipment	23,726	23,726 X 6	142,356
Maintenance	21,353 per year for all centres	21,353 X 3	64,059
Communication	0.00	0.00	0.00
Staffing	50,000 per year for all centres	50,000 X 3	150,000
Total cost over three years			<u>392,415 AUD</u>



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Expenses prevented by Tele Health

Description		Total
Return travel cost for patient and one relative to Townsville	Mt Isa: 380 X 2X 600 \$ = 4, 56,000 Proserpine: 11 X 2 X 150 \$ = 3300 Hughenden: 10 X 2 X 260 \$ = 5200 Winton: 5 X 2 X 320 \$ = 3200 Doomadgee: 3 X 2 X 1150 \$ = 6900	474, 600
Overnight accommodation for Patient and one relative at Townsville	100 \$ X 409	40,900
Aero Medical Retrieval of four patients from Mt. Isa	13,100 \$ X 4	52, 400
Specialist travel once a week	500 \$ X 48 X 3	72,000
Total savings over three years		<u>639,900 AUD</u>



2019

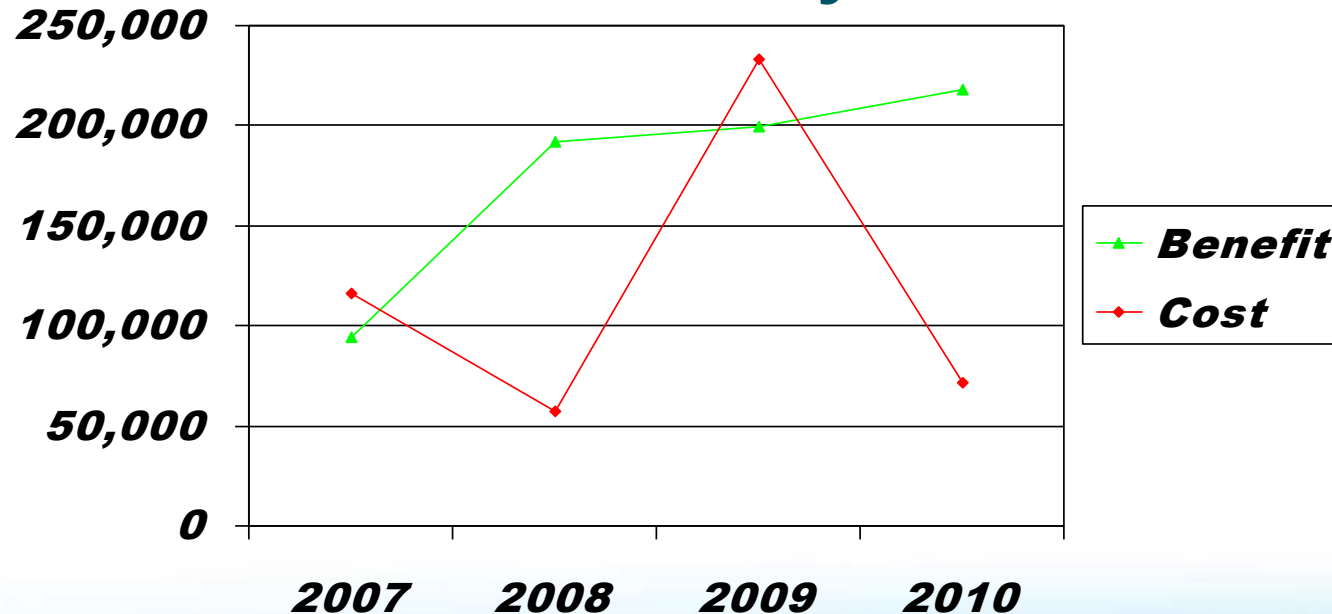
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Cost-Benefit Analysis



Over 3 years saved
\$227,485

Benefit starts after
first year

More centres,
greater distance,
more consultations
more benefit



Is teleoncology as effective as standard oncology care for the treatment of cancer?

- COSA and CCA produced clinical practice guidelines for teleoncology
- https://wiki.cancer.org.au/australia/Guidelines:COSA:Teleoncology/Summary_of_recommendations
- Multidisciplinary care by teleoncology models is acceptable to health professionals and patients
- Use of teleoncology for multidisciplinary team care can result in management decisions similar to face to face assessments. (Grade C evidence)



Teleoncology Guidelines

- Teleoncology models of care for medical nursing and allied health
- Covers efficacy for diagnosis, screening and treatment including palliative care
- Covers privacy, legal issues and safety



mHealth: A Smartphone Text Message Program to Support Adherence to Oral Chemotherapy in Young and Adult Cancer Patients

Srabal Ross et al 2019

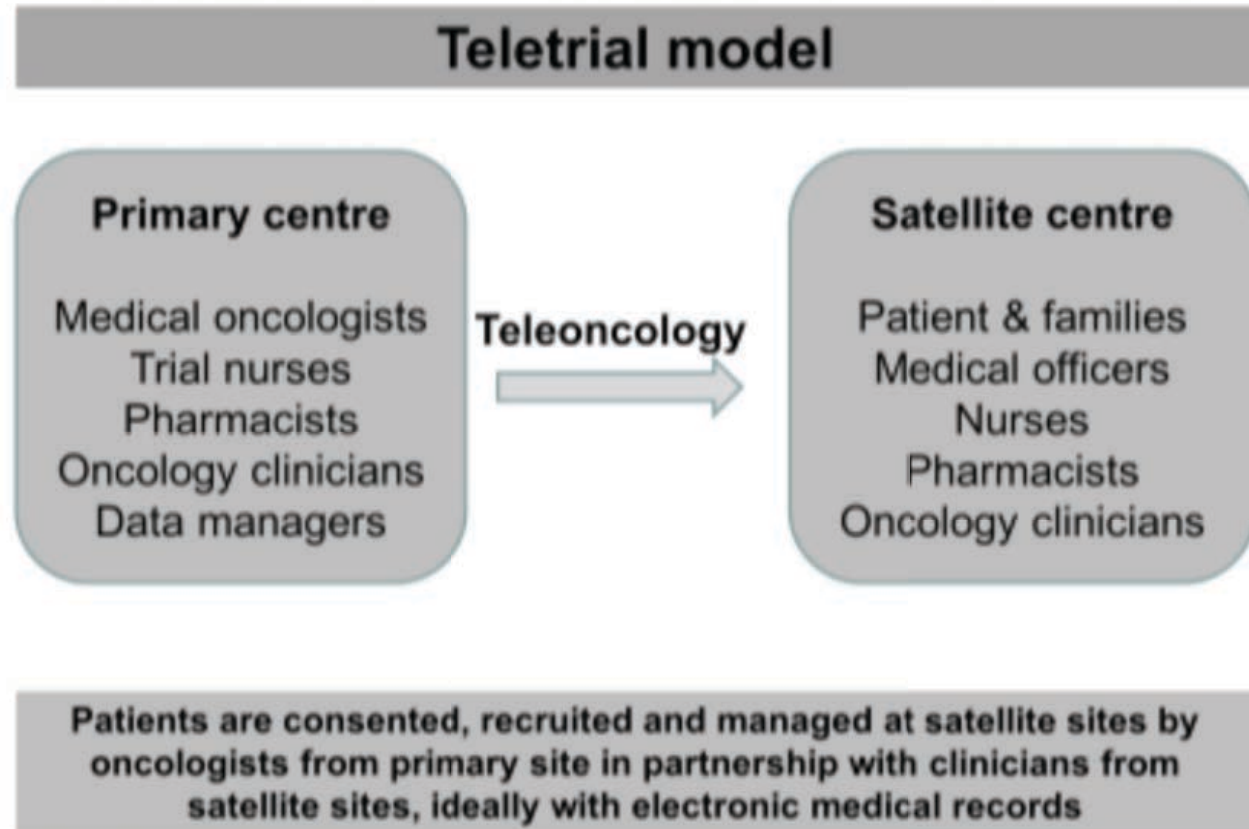
- A smartphone text message-based tool, consisting of behavioural strategies to address the three main reasons for oral chemotherapy non-adherence (forgetfulness, side-effects and poor knowledge of oral chemotherapy) was developed
- The tool includes delivery of oral chemotherapy intake reminders and hyperlinks to documents with information about oral chemotherapy and side-effect management
- Compliance recorded by MEMS (Micro-Electro-Mechanical) dosette boxes



Teletrials

[https://wiki.cancer.org.au/australia/Guidelines:COA:Teleoncology/
Australian Teletrial Model](https://wiki.cancer.org.au/australia/Guidelines:COA:Teleoncology/Australian Teletrial Model)

COSA is recruiting
a treating regional
and rural patients to
clinical trials by linkages
with primary trial centres



Remote supervision of medical training via videoconference in northern Australia.

Cameron et al BMJ Open 2015, 5:e006444.

- This qualitative study evaluated the Townsville teleoncology supervision model for the training of junior medical officers in rural areas of North Queensland, Australia
- Themes included the practicalities of remote supervision, challenges of recognising non-verbal cues and physical examination
- Must address training in the use of videoconferencing for supervision and admin and nursing support



Addressing International Disparities

Hazin et al Lancet Oncol 2010, 11: 204-210

- Internet access is now available in many LMC
- Can be linked with experts in HIC
- Human factors rather than resource factors are often obstacles – political or professional power, reluctance to seek 2nd opinions, fear of change



Summary

- Teleoncology has been shown to be cost effective and clinically effective (longer distances and greater patient numbers are key)
- Many other applications embrace education, trial participation and mobile health
- Can help with regional and international disparities

