Facilitating personalised burn care across a state-wide health network: supported decision making via Telehealth

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Background:

Western Australia has a population of 2.6 million; 10% of the national population dispersed over a third of Australia's landmass. There is 1 tertiary adult burns unit with 10 beds and 1 tertiary paediatric burns unit with 9 beds, both located in Perth. The majority of burn injured patients have their initial treatment at a health facility other than one of the 2 major burn centres.

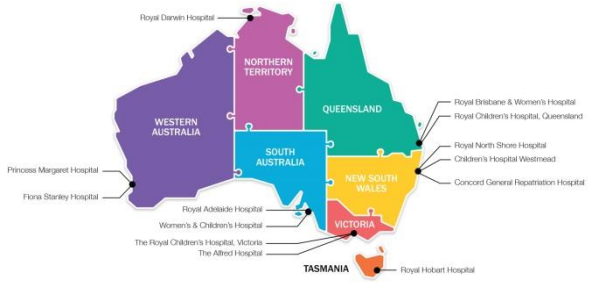
Appropriate initial treatment and early referral of a burn injury is critical to reduce complications, prevent surgery and improve long-term outcomes. Collaboration with rural hospitals utilising digital images reduces the challenge for non burn – trained clinicians to assess and treat both acute and rehabilitative burns.

Network development and telemedicine are an important aspect of rural health care and integral to the appropriate and timely initial and ongoing care of the burn injured patient. Developing such networks helps to decrease the professional isolation of rural clinicians along with the associated costs of patients travelling to Perth.

Burn wound care is well suited to digital imaging as the visual assessment of a burn is paramount for accurate assessment of depth and size. This service, now embedded in the Burn Service WA Model of Care plays an important role in the burn care of rural/remote people.

A Telehealth digital photo review clinic aims to provide a single point of contact at the Adult State Burns Service and improve equitable access to specialised burn care. The Clinical Nurse Consultant led, online triage of photos using email, facilitates appropriate transfers, prevents unnecessary transfers and the associated personal, emotional and fiscal costs. It also supports early discharge back to local care providers.

Western Australia has only 1 Adult and 1 Paediatric Burns Unit within a land area of 2.. 5 million km²

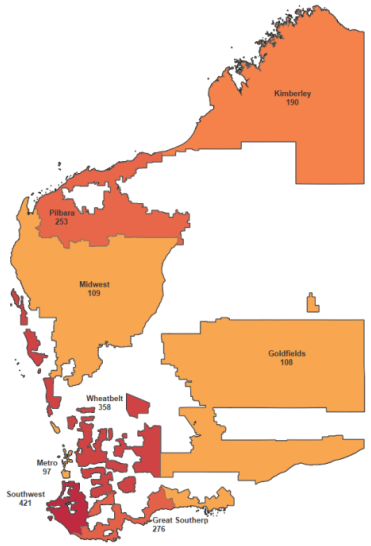


Method:

Digital photos are emailed with the patient's consent to a designated address.

An automatic reply generates a referral form, contact information and burn wound dressing advice for out of hours assistance. The rural centre is contacted and a dialogue ensues, with burn wound management guidance and transfer necessity determined.

Burns Episodes of Care Telehealth Photo Reviews: July 2015 – July 2017



Total referrals: July 2015 - July 2017	948
Transferred and admitted	100
Surgical intervention as inpatients	77
Transferred: clinic only	152

Patient Journey

1 DOI 7/8/17 at 1900hrs.

2
- Referral to oncall registrar out of hours 8/8/17 from Nickol Bay Hospital
- Patient was on a holiday in Nickol Bay but lives in Geraldton

3 Nickol Bay ED advised to send photos to **fsh.burnstelehealth@health.wa.gov.au** and to put Intrasite and Acticoat on the wounds then arrange transfer of patient by RFDS to FSH for admission to 4B.

4 Photos sent 9/8/17 at 1338 in the afternoon.

5 Photos and call from wound nurse at Nickol Bay hospital on the morning of 9/8/17

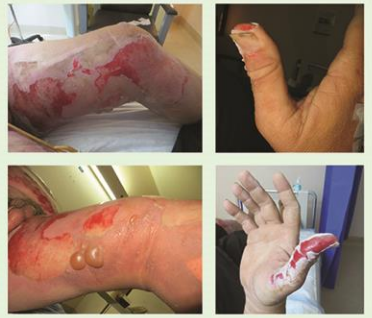
6 Following phone call with registrar, IV inserted, IDC inserted. Hourly urine measures commenced.

7 Patient transferred to FSH for an inpatient stay of 19 days. Interhospital transfer to Geraldton regional hospital.

8 Photo clinic follow up with hospital ward and post acute care. Photos sent with each appointment to burns CNC. Long term follow up via telehealth with Consultant.

Patient Details

- 43 yr old morbidly obese man (176 kg)
- No reported past medical history
- Patient had poured petrol onto a BBQ resulting in the flames flicking back at him. He sustained burns to:
  - Bilateral thighs and lower legs
  - Left leg burn extends over left knee to lower leg but not circumferential
  - Right leg: upper anterior and posterior lateral thigh
  - Left calf
  - Right thumb and dorsum of fingers also burnt
  - Abdominal apron also burnt



- Mixed depth burns: deep partial to full thickness
- TBSA assessed as 10-12% using photos sent

Problems for local team

- Bariatric patient: local hospital does not have the capability to manage a bariatric patient for extended time frame.
- Regional staff not confident with burns care - relied on ambulatory care nurse at the hospital to start duty in the morning to assist with treatment shower and dressing.
- RFDS unable to retrieve patient due to his weight and inclement weather in Perth. This resulted in a transfer delay of 78 hours post injury.
- Insufficient Acticoat to apply to burns on a daily basis for more than 48 hours.
- Local Hospital did not have large size tubigrip
- Ambulatory care nurse was support person for ward staff while still having an outpatient clinic to run

Support provided from FSH

- Burns CNC phone call to Ambulatory care nurse to confirm urine output parameters, IV fluid regime, oral feeding regime, and dressing advice.
- Follow up phone calls to determine urine output and provide support and answering of questions
- IV fluids regime titrated to urine output in discussion with Burns CNC
- Advice provided on which areas of the burn the Acticoat should be put on given small amount available.
- Burns Consultant discussion with local Registrar regarding commencement of Clexane including dose and frequency.
- General support for Nickol Bay hospital team with contact details of FSH burns staff.

Testimonials:

' The photo and phone consult service provided by Fiona Stanley burns Clinical Nurse Consultant is an invaluable resource for clinicians working in rural areas of Western Australia. Having the ability to photograph client's wounds and discuss their management plan, without delay in treatment, is now providing country patients with timely care in line with current best practice. Whilst we are not busy enough to have a specialist on site, we now have one on hand that is always happy to assist with invaluable knowledge and education. As a clinician this support service has developed my confidence in patient assessment, appropriate dressing selection and ability to support other rural clinicians caring for burns patients. The ongoing working relationship I have developed with the Burns CNC has facilitated clearer communication and smoother transfer and discharge planning for country patients and I look forward to continuing to work together.'
- Bec (Acting Clinical Nurse Ambulatory Care at Nickol Bay Hospital)

' I am a remote area nurse working in a sole nurse clinic in a remote area 400km away from Perth. I have had to deal with many patient presentations with various difficult burns in various areas of the body from faces to trunk to limbs and mostly out of hours. I do not have access to a telehealth service or a knowledgeable doctor standing by my side. I have set up a burns "tool box" that consists of details for referral process and includes the suggested dressing supplies for use in case of a burn emergency according to FSH burns unit guidelines. I also take photos of the wound as a photo speaks a 1000 words is easy to send by mobile phone and to upload into an email is usually more useful and practical than trying to work around skype, inflexible desk top computers and a pt. who is in distress and pain due to their burns. I appreciate being able to speak to Sharon and her colleagues for support about anything to do with care of a burn that fits in with the healing of the burn the lifestyle of the patient.' – Jenny (Remote Area Nurse – Hyden)

Conclusion:

The use of telehealth and digital imagery improves quality and individualised care of burn injured rural/regional/remote Western Australians, while offering opportunities to reduce length of stay and avoid unnecessary transfers. This process improves the knowledge of rural/regional health care professionals; building better relationships with the local communities. It reduces the need to separate families and reduces disruption to aboriginal patients who suffer significant psychological stress when separated from family and community.

Reference:
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