



Remote wound care during COVID-19

COVID-19 is an ongoing worldwide pandemic that has created a global health crisis.



Dr Ethel Andrews,
President of the South African Burn Society

O **N 23 MARCH 2020,** President Cyril Ramaphosa announced a new measure to combat the spread of the Covid-19 coronavirus in South Africa, which was a nationwide lockdown with severe restrictions on travel and movement. As of 29 April 2020, the total number of confirmed cases (at the time of going to print) is now 5 350 and 103 Coronavirus COVID-19 related deaths. The lockdown coincides with our winter season which normally sees an increase in burns due to heating appliances used, shack fires due to fallen candles, paraffin-related burns and overloading of plugs.

According to the World Health Organization (WHO) burns occur mainly in the home and workplace. Children and women are usually burned in domestic kitchens from hot liquids or flames, or from cookstove explosions while men are most likely to be burned in the workplace due to fire, scalds, chemical and electrical burns.¹

With the onset of lockdown there has been an increase in paediatric burns in South Africa. Hospitals across the country have tried to reduce the risk to patients

THICKNESS	DEGREE	DEPTH	CHARACTERISTIC	PATIENT QUESTIONS
Superficial	First	Epidermis	Dry, red, blanches, painful	Is it dry, intact and painful?
Superficial Partial	Second	Papillary dermis	Blisters, weeping, red, blanches, painful	Is it red, blistered, swollen, and very painful?
Deep Partial	Third	Reticular dermis	Blisters, wet or waxy dry, reduced blanching, painful	Can you see hair follicles or blisters?
Full thickness	Fourth	All layers of skin destroyed. May involve fascia, muscle and/or bone	Charred, waxy white, leathery does not blanch absent pain sensation (Pain present surrounding area)	Is it whitish, charred, or due to translucent? Is the skin peeling off, with minimal sensation in the area?

by discharging patients earlier and opting to make use of outpatient facilities where available, deflecting smaller burns to other hospitals and making use of telehealth and telemedicine. With restrictions on movement, not all burns need to be admitted to hospital with minor burns are being treated at home or on an outpatient basis. The American Burn Association defines minor burns in a disaster as those

involving noncritical sites and less than 10% TBSA for partial-thickness burns. Critical sites are all major joints, hands, feet, face and perineum. Excluded from this category are patients with minor burns who also have smoke inhalation or associated traumatic injuries.² Burn units in South Africa have not changed the admission criteria and if a health care practitioner is in doubt its best to contact the referral hospital directly.

MANAGING MINOR BURNS REMOTELY.

1. First Aid

Burn first aid includes: Cooling the burn by running under cool water for 20 minutes, or cold compress if running water is not available, take off jewellery and clothes from the burned area and protect the wound by covering it.³ Manage pain with paracetamol.

2. Wound assessment remotely

Size and depth matters. If possible, a visual image of the wound allows for better assessment and decision making. Telemedicine in South Africa is required to be in line with applicable legislation, in particular the National Health Act No. 61 of 2003 (as amended).

The National Department of Health's e-Health Strategy South Africa (2012-2016) specifically refers to telemedicine as 'a tool that could bridge the gap between rural health and specialist services.'⁴ On 27 March 2020, the Board of Health Care Funders have informed healthcare providers that telehealth and telemedicine may be practised as a result of South Africa's State of Disaster.⁵

- A.** Location of the wound: Is the burn on face, hands, feet, perineum, circumferential or over a joint?
- B.** Size: The Rule of Nines uses a rough estimate that represent multiples of 9%. In adults the head and neck are roughly 9%, the anterior and posterior chest are 9% each, the anterior and posterior abdomen are 9% each, each upper extremity is 9%, each thigh is 9%, each leg and foot is 9% and the remaining 1% represents the genitalia.^{6,7,8,9}

The palmar surface of the patient's hand is approximately 1% of their body surface over all age groups; visualising the patient's hand covering the burn wound approximates the percentage of body surface area involved^{6, 7, 10,11}. This is an easier method and is more often used in paediatrics and will similarly be an accurate method for measuring wound size remotely especially if no visual is available remotely

- C.** Depth: Burn depth is assessed according to the layers of skin that are damaged by heat source. These are epidermal or superficial (first-degree), partial-thickness (second-degree), which may also be classified as superficial or deep partial-thickness) and full-thickness (third-degree) burns (may also be classified as a deep full-thickness).¹²
- D.** Presence of infection: Burn wound surfaces are sterile immediately following thermal injury for a short time.¹³ But humans carry significant numbers of bacteria that will quickly contaminate the open wound.¹⁴ The clinical signs of infection in wounds are cellulitis, malodour, increase in pain, delayed healing or deterioration in the wound or wound breakdown and increase in exudate volume (15). Early recognition of infection is important because

infection is by far the most frequent complication encountered by patients with burn injuries and it is therefore imperative that practitioners and patients recognise when care needs to be escalated.

Superficial burns heal within a few days, partial thickness burns heal within three weeks and full thickness burns require surgical management for closure

- E.** Signs of none healing: The wound edges can serve as an important parameter to determine whether or not the present wound treatment is effective over time.¹⁶ Wound healing occurs when the wound edges of a deep wound show signs of new granulation tissue and a superficial wound's edges epithelialise and epithelium islands are visible.¹⁶ Superficial burns heal within a few days, partial thickness burns heal within three weeks and full thickness burns require surgical management for closure.¹⁷ If the wound does not progress according to the expected time-line it might be due to burn conversion, infection or current treatment not being effective in which case the decision for home-based care must be reviewed, adjusted or abandoned and patient referred to hospital.

3. Treatment

Requirements

- Dressing pack or gauze, gloves, clean bowl and waste bag
- Scissors cleaned prior to use
- Wound dressings
- Previously boiled cooled down water

METHOD

- Take or administer analgesics
- Wash hands thoroughly especially between fingers and palms of hands
- Dry hands with a clean towel/kitchen roll
- Open dressing pack or create a clean surface with towel
- Pour water into dressing tray/ bowl
- Position waste bag for dirty dressings close to wound
- Open new wound dressings and drop into clean opened dressing pack/ clean towel surface
- Remove dressing without touching the inside of the dirty dressing or the wound bed, you might have to wet dressing with tap water if dressing is stuck to wound, do not pull if stuck as this will damage the healing wound
- Place dirty dressing into the waste bag
- Wash hands again
- Apply clean gloves
- Clean the wound bed by gently wiping

to remove any wound residue and then surrounding skin with tap water and gauze

- Ensure that you clean the wound before the surrounding skin and use a new piece of gauze for the surrounding skin
- Dependent upon the location of the wound it may be more appropriate to shower, which will ensure that the wound bed and surrounding skin are clean prior to dressing
- Pay attention to the condition of wound; colour and size of the wound; new wounds; signs of infection; condition of wound margin; colour, amount and viscosity of wound fluid
- Apply dressing
- Dispose waste bag safely
- Document dressing change and call health professional if you have any concerns.

Remote consultations are not as a replacement for normal 'face-to-face' healthcare but an add-on meant to enhance access to healthcare during these difficult times and minimises the risk of being exposed to COVID-19. Successful remote management of burns is dependent on patient selection, selection of an appropriate dressing which minimises pain and frequency of dressing changes, and open communication between the health care practitioner and the patient. **MC**

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