

Managing Crusted Scabies in Remote Communities

2017 EDITION

Chronic disease case management
of Crusted Scabies to break the cycle
of recurrence and transmission

Document prepared by:

ONE
DISEASE

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Contributors to the Preparation of this Document Michelle Dowden, Irene O'Meara, Clare Westphalen, Professor Bart Currie, Dr Vicki Krause, Nicola Slavin, Dr Ella Meumann, Meg Scolyer and Hannah Woerle.

The first edition of this document was prepared by Every Voice Counts and One Disease.

General Enquiries should be directed to:

One Disease

Level 1, 80 Wentworth Avenue

Surry Hills NSW 2010

contact@onedisease.org

Program Enquiries should be directed to:

One Disease

Building 58, RDH Campus

105 Rocklands Drive

Tiwi NT 0810

contact@onedisease.org

CRUSTED SCABIES AND ITS SIGNIFICANCE

All clinical protocols in the guide are based on the CARPA Standard Treatment Manual 6th Edition. Please follow latest CARPA at all times.

In the Northern Territory, Crusted Scabies is a notifiable disease under the *Notifiable Diseases Act, NT*. All cases are required, by law, to be reported to the NT Centre for Disease Control (CDC) by laboratory upon detection of *Sarcoptes scabiei* mites on skin scrapings. Cases also must be reviewed and confirmed by an Infectious Diseases Physician or a Dermatologist to meet case definition (see pages 3-7).

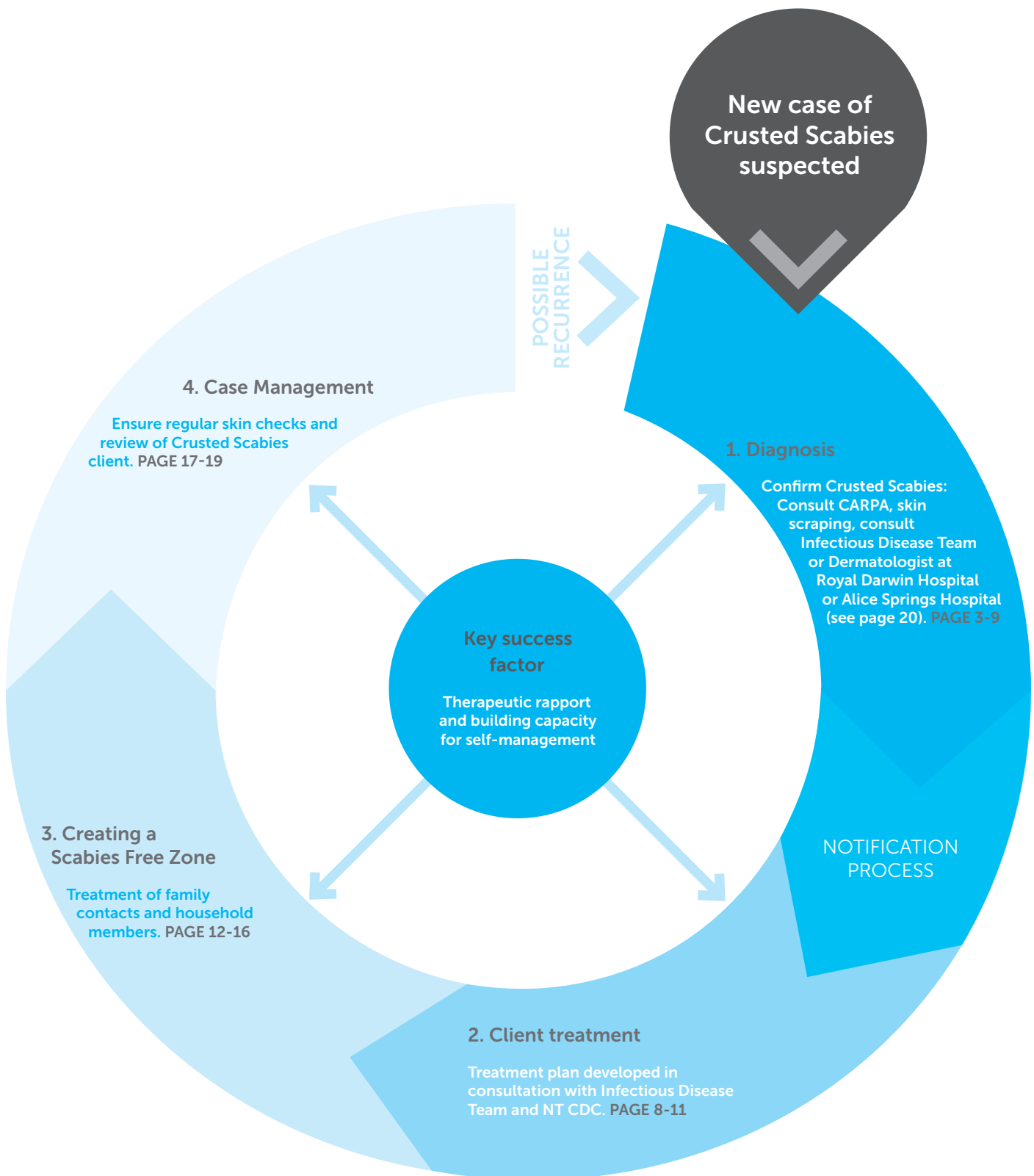
What is it?

- Crusted Scabies is a severe form of scabies, caused when an individual's immune system is not able to control mite proliferation.
- Hyper-infestation develops, often with more than a million scabies mites on the one person. This is compared with 5-10 mites in scabies cases.
- Abnormally thick layers of keratinised cells in the stratum corneum (the outermost layer of skin), contain thousands of scabies mites, eggs and mite faeces. Hyperkeratosis can be localised or widespread.
- Crusted Scabies must be treated as a chronic condition.

What is its significance?

- Individuals with Crusted Scabies experience lower life expectancy, frequent hospitalisations and can develop life-threatening secondary bacterial complications and sepsis.
- Household contacts of unmanaged Crusted Scabies are at risk of recurrent scabies infestations, Streptococcus A skin sores, poor sleep quality and disruption of school and work. Streptococcus A skin sores are associated with Rheumatic Heart Disease and Chronic Renal Disease.
- Crusted Scabies is highly infectious and causes outbreaks of scabies throughout households and communities. Effective management is essential to controlling scabies outbreaks.

SUMMARY OF GUIDE



1 DIAGNOSIS

Crusted Scabies is a specialised diagnosis. Consultation with an Infectious Diseases Physician or Dermatologist is essential.

Prompt and correct diagnosis of Crusted Scabies is vital. Misdiagnosis results in unnecessary and expensive treatment and puts the client on an unnecessary management plan. Time spent properly confirming diagnoses will save time and resources in the future.

To make a positive diagnosis you must confirm the below:

- A.** Infectious Diseases and/or Dermatology teams at Royal Darwin Hospital or Alice Springs Hospital to confirm clinical appearance (see pages 4-6).
- B.** Take skin scrapings for mites and send to laboratory (see page 7).

Positive diagnosis of Crusted Scabies will elicit a Public Health Response (see page 8).

1 DIAGNOSIS

A Identify case / confirm clinical appearance

Characteristic crusted skin patches:

- Thickened, scaly skin patches. Often not itchy.
- Often, but not always, on buttocks, hands, feet, elbows and armpits.
- Scale may have distinctive creamy colour.

Not to be confused with tinea, psoriasis, eczema or dermatitis as presentation can be similar.

Specialist diagnosis:

- Always consult Infectious Disease Team or Dermatology via switch at Royal Darwin Hospital or Alice Springs Hospital (see page 20).
- As underlying immune deficiency is often found in Crusted Scabies cases, further testing is warranted. Discuss with Infectious Disease physician or Dermatologist.

Alert:

- Staff and carers should practice infection control precautions including wearing disposable gloves.
- Take care not to come in contact with scabies-containing fomites such as bedding or seating.
- If you think you have been exposed to scabies during the course of your work, apply a scabicide topical treatment prophylactically (e.g. Benzyl Benzoate or Permethrin 5%) as per manufacturer's directions.



Crusted Scabies manifestation on the feet of a client



Sarcoptes scabiei mite under the microscope

1 DIAGNOSIS

A Clinical appearance



Crusted Scabies cannot be excluded unless buttocks are seen (common area for crusts).

Hyperkeratotic (thick, scaly, cream coloured) areas with significant skin shedding (highly infectious).



Depigmented areas of skin. This is evidence of repeated recurrences of past crusting, signifying chronicity and severity (see grading scale on page 9).



Crusted Scabies manifestation on the toes and feet.



Crusted Scabies manifestation in a client with claw hand from previous case of leprosy.

1 DIAGNOSIS

A Clinical Appearance: Common errors

Is it a case of Crusted Scabies or is it crusted infected sores from scabies?

It is common for immediate contacts of clients with Crusted Scabies to be misdiagnosed with Crusted Scabies.

Misdiagnosing crusted sores (scabs, dry exudate) and/or fungal infection as Crusted Scabies



Scabies papules.

*Crusted sores and
fungal infection.
This is not Crusted Scabies.*

*Scabies vesicle.
This is not Crusted Scabies.*



*Crusted sores.
This is not Crusted Scabies.*



*This is simple scabies with localised epidermal thickening.
This is not Crusted Scabies*



1 DIAGNOSIS

B Skin scrapings

Collection

1. Identify an area of suspected crusting (thickened, scaly skin), or mite burrows.
2. Gently use the sharp side of a sterile scalpel held at a 90° angle to scrape loose flakes of skin into a sterile urine collection jar. If true crusting is present, skin should be easily collected.
 - Don't rush the process. The more skin collected, the greater the chance of confirming the diagnosis. A few pieces of skin may be sufficient, however try to collect as much skin as possible.
 - If skin is not readily falling into the jar, Crusted Scabies is less likely.
 - Do not cut or injure the skin. These clients are at high risk of bacterial infection and sepsis.

Collection technique



Collect loose flakes of skin from areas of suspected crusting



3. Send collected sample to laboratory for testing. Make sure to request testing for scabies mites.
 - Absence of mites from skin scrapings does not rule out the possibility of Crusted Scabies. If results are positive, this greatly increases the likelihood of Crusted Scabies. In some cases, a repeat skin scraping may be warranted.

A positive skin scraping is required to meet the case definition of Crusted Scabies. All positive skin scrapings will be reported by the laboratory to the NT Centre for Disease Control (CDC).

2 CLIENT TREATMENT

PUBLIC HEALTH RESPONSE

When all criteria for notification of a case of Crusted Scabies are met (see pages 3-7), the NT Centre for Disease Control (CDC) will initiate a Public Health Response.

NT CDC will contact the referring Health Service of the requirements for the Public Health Response. This will include full contact tracing during the client's course of treatment (see pages 9-19).

Please refer to your nearest Centre for Disease Control office for further information on notification.

2 CLIENT TREATMENT

Grading the Disease (see CARPA Standard Treatment Manual)

Choose best option in each category. Add the numbers to gain an overall score.

A: Distribution and extent of crusting

1. Wrists, web spaces, feet only — OR less than 10% total body surface area (TBSA)
2. As above plus forearms, lower legs, buttocks, trunk OR 10–30% of TBSA
3. As above plus scalp OR more than 30% TBSA

B: Crusting/Shedding

1. Mild crusting (less than 5mm deep), minimal skin shedding
2. Moderate crusting (5–10mm deep), moderate skin shedding
3. Severe crusting (more than 10mm deep), profuse skin shedding

C: Past episodes

1. Never had it before
2. 1–3 prior hospitalisations for Crusted Scabies OR depigmentation of elbows, knees
3. More than 4 prior hospitalisations for Crusted Scabies OR depigmentation as above PLUS depigmentation of legs/back or residual skin thickening/scaly skin (ichthyosis)

D: skin conditions

1. No cracking in skin or pus present (pyoderma)
2. Multiple pustules and/or weeping sores and/or superficial skin cracking
3. Deep skin cracking with bleeding, widespread purulent exudate

Score:

4 – 6 = Grade 1

7 – 9 = Grade 2

10 – 12 = Grade 3



Depigmentation of skin in Crusted Scabies client



Severe crusting (more than 10mm deep), profuse skin shedding

2 CLIENT TREATMENT

Working together

Clients can suffer stigmatisation and blame, and may avoid health services. To minimise this, please follow the steps below.

1. Identify any fears the client has which could be barriers to treatment

Common concerns of Crusted Scabies clients:

- Fear of hospitalisation in an isolation ward.
- Worry about onerous burden involved in whole of household treatment.
- Failure of previous treatments reduces motivation to try again.

2. Work with client and family to develop a treatment plan they are comfortable with

Strategies for success include:

- Take the time to visit families in their home.
- Focus on establishing rapport before discussing treatment regimen.
- Take the time to explain the disease, its chronicity, self-management and the creation and maintenance of a Scabies Free Zone.
- Take the time to gain support of a senior member of the household.
- Do not label the client or family non-compliant. The family must be part of the treatment team.
- Focus on education about creating and maintaining a Scabies Free Zone in order to protect the person with, or at risk of developing, Crusted Scabies.

2 CLIENT TREATMENT

Ideally all clients should be admitted to hospital for treatment (especially in cases of grades 2-3 Crusted Scabies). This is due to the high risk of sepsis and re-infestation from fomites or contacts.

For community based treatment of Crusted Scabies (grade 1 only to be considered), it is very important that application of the topical treatment is directly observed by the health staff.

Community based treatment:

Refer to CARPA Standard Treatment Manual at all times.

1. Give Ivermectin single dose on days 0, 1, 7 for grade 1 disease. Give with food or milk for better absorption. N.B. Longer treatment needed for Grade 2-3. Contact Infectious Disease Team or Dermatology at Royal Darwin Hospital or Alice Springs Hospital (see page 20).

2. Apply topical agents (critical for treatment):

Benzyl Benzoate 25% lotion (+/- tea tree oil 5%):

- Dilute if client under 12 years old or there is skin irritation. Do not use if client less than 6 months old.
- Apply to the whole body every second day, after bathing, for the first week, then 2-3 times weekly until cured.
- Apply from head-to-toe, ensuring the whole body is covered, avoiding mucous membranes. Make sure the lotion covers areas between the fingers and toes, soles of feet, under nails (clip nails first), behind ears, the groin, bottom and genitalia.
- Wash lotion off after 24 hours. Do not apply on same day as Calmurid. Use Permethrin 5% if Benzyl Benzoate is not available.

Calmurid® (urea 10%, lactic acid 5% in moisturising cream):

- This softens skin crusts and facilitates shedding, allowing better penetration of scabies lotion or cream.
- Apply after bathing on the days that Benzyl Benzoate or Permethrin are not applied.
- Soak and scrub crusts with a sponge (eg. Medisponge) the next day, prior to application of Benzyl Benzoate or Permethrin 5%.
- Calmurid® only needs to be applied to crusted or thickened skin areas.

3. Clients must be seen daily. Linen and clothes must be washed daily. All household members must receive treatment for scabies together. Work with the household to create and maintain a Scabies Free Zone in the household (see pages 12-16).

3 SCABIES FREE ZONE

- Home visits are critical to gain trust and understanding and improve treatment outcomes.
- It is important to ensure the household is scabies free to prevent recurrences of scabies.
- The cycle of transmission can be broken. Consistent case management and follow-up of this chronic disease improves quality of life for households and reduces clinical workloads.

3 SCABIES FREE ZONE

SELECT MEDICATIONS TO USE

Treat all of the household (scabies cases and contacts) on day 1. Repeat for active scabies cases on day 7.

First line treatments;

Permethrin 5% (Lyclear)

Instructions on use of Permethrin as per CARPA Standard Treatment Manual scabies chapter.

- Do not use in children under 2 months (use Crotamiton/Eurax).
- Suitable for children 2 months and over and adults.
- Apply a thin layer of Permethrin 5% cream on whole body including head and face – avoid eyes and mouth.
- Requires overnight application.

Benzyl Benzoate (Benzemul)

Instructions on the use of Benzyl Benzoate 25% emulsion as per CARPA Standard Treatment Manual scabies chapter.

- Apply topically to skin from the neck down and leave on overnight.
- Do not use in children under 2 years (use Permethrin 5%, or if under 2 months use Crotamiton/Eurax).
- For children 2-12 years and adults with sensitive skin – dilute with equal parts water (1:1).
- Adults – apply directly.
- Benzyl Benzoate may occasionally cause severe skin irritation. Be sure to test on a patch of skin first. Usually resolves in 15 minutes.

Consider;

Ivermectin (Stromectol)

Consider the use of Ivermectin following consultation with a Medical Practitioner.

N.B: Not suitable for use in pregnancy.

Do not give to children under 5.

Make sure topical treatments cover the entire body including areas between fingers and toes, feet including soles of feet, under nails and buttocks. Refer to the packaging of each product for further information.

3 SCABIES FREE ZONE

Family treatment day - making sure everyone joins in

The application of topical treatment is inconvenient, however, ensuring all household members use the treatment is critical to the success of a family treatment day. Make it a fun occasion and consider the following tips to get everyone involved.

Strategies for success

- Take time to get the support and interest of a senior household member. Explain the benefits in terms of reduced sores and improved sleep quality. It is important to be flexible with your timing.
- Discuss with the family/household and select a day and time when most of household will be present (e.g. after school in the afternoon).
- Involve senior members of household in helping others apply topical treatments.
- Start the application of topical treatment during the home visit. Start by involving primary carers to apply treatment on children.
- Young children might be frightened. Start with an older person, apply on the arms of carers and staff to get things started. After initial reluctance, often a tipping point is reached where everyone joins in. The trick is to stay positive and keep going until you reach this point.
- Encourage older teens and adults to help each other with application. Highlight wearing topical treatment as a sign of their support for household health and wellbeing.
- Ensure privacy and appropriate consent before applying creams. Parents or primary carers should apply creams on children and be present at all times.
- Be discrete. The family may not want the whole community to know they are being treated for scabies.

Considerations

- Screen children and record names of children with scabies. Refer other conditions to the local Health Service for treatment. Remember to document all treatments and referrals on Clinical Information Systems.
- If the family agrees, organise a clean-up for the house. Focus on safe hygiene, with the overarching aim of killing mites and creating and maintaining a Scabies Free Zone. If possible, supply cleaning products and equipment for household clean-up.
- Avoid other health promotion or clinical activities while doing a family treatment day.

3 SCABIES FREE ZONE

Safe Hygiene

The aim of safe hygiene is to kill scabies mites and promote the creation and maintenance of a Scabies Free Zone. While treatment of household members is the most important aspect of creating a Scabies Free Zone, shedding of crusts containing thousands of mites into the environment by a Crusted Scabies client can be a source of reinfestation. Mites usually only survive off the body for 3-5 days in optimum conditions (warm temperature and high humidity).

Clients with scabies spread mites via direct skin-to-skin contact and only have 5-10 mites, however, the skin shed by a Crusted Scabies client can contain thousands of live mites and can infect others without direct skin-to-skin contact. A household clean-up is therefore an important aspect of creating a Scabies Free Zone. If the household has a Crusted Scabies client who has been hospitalised, this must be done before the client returns home.

To maintain a Scabies Free Zone, any subsequent visitors to the house with possible scabies must be quickly identified and treated.

Strategies for success

- If the family agrees, facilitate a clean-up for the house, with a focus on creating and maintaining a Scabies Free Zone. If required, supply cleaning products and equipment. The clean-up should be developed with the family and should be realistic.
- If available, use a vacuum cleaner to suck up mites and skin flakes from floors, furniture and vehicles.
- Once the person with Crusted Scabies has left the household for treatment, wash soiled clothes and linen (preferably in hot water) and dry. Where washing machines are unavailable, clothes and linen can be isolated in a sealed plastic bag for one week to kill the mites.
- If the client with Crusted Scabies is having community based treatment (see page 11), that person's linen and clothes should be washed daily.
- Identify any potential barriers and troubleshoot these with the family. Consider additional individuals and resources available in the community which may provide assistance. It may be appropriate to include Care Coordinators, Community Based Workers, Aboriginal Health Practitioners or Council workers.

Considerations

- Take the time to gain support and interest from senior members of the household. Explain the concept of safe hygiene, i.e. the goal of killing mites.
- The focus should be on safe hygiene and be realistic to help the Crusted Scabies client and their family to create and maintain a Scabies Free Zone. Be mindful that you are entering somebody's home and have a respectful approach.

3 SCABIES FREE ZONE

Essentials

- Ensure a regular supply of topical treatments (e.g. 2 Benzyl Benzoate, 4 lactic acid/urea (Calmurid) and 4 moisturisers per month) are given to household. Ensure everyone in the household is treated together.
- Benzyl Benzoate should be used for regular preventative treatment.
- Clients should avoid sharing a bed and should have a hospital grade mattress which can be easily cleaned (where possible). Alternatively, a mite-resistant mattress protector may be used and washed.
- Clients at high risk of re-exposure to scabies are those living in a house with many occupants, especially young children.
- An intensive phase of clinic involvement is critical to show the client and household the benefit of adherence to the chronic care plan (e.g. improved sleep quality) and that commitment by the Health Service exists.
- The client's seniority in the house should be considered. More support may be needed for clients who are less senior.

The ultimate goal should be self-care and case management with clinics supplying topical treatments and conducting regular skin checks.



Clothes and linen should be washed and dried.



If clothing and linen cannot be washed, bag and isolate for 7 days to kill mites.

4 CASE MANAGEMENT

Maintenance plan to prevent recurrences once client and family are treated and free of scabies.

4 CASE MANAGEMENT

Ongoing management

Ongoing management of the client is required after a full treatment for Crusted Scabies as per CARPA Standard Treatment Manual and where an excellent response has occurred with no evidence of residual active scabies. Full skin checks must be deliberate and regular to ensure clear skin.

Risk of recurrence and severity	How to grade	Frequency of skin checks	Preventative treatments
Low - Moderate Grade 1	Low infectivity: <ul style="list-style-type: none"> Crusts isolated and discrete patches — less than 5% total body surface area (TBSA). Skin: Minimal shedding AND <ul style="list-style-type: none"> Chronicity: 0–3 prior hospitalisations for Crusted Scabies. 	Monthly Examine skin including buttocks	<ol style="list-style-type: none"> Encourage regular use of lactic acid/urea (Calmurid) and moisturiser on areas affected by past crusting. Apply Benzyl Benzoate as needed, if exposed to scabies. Consider direct observation of Benzyl Benzoate application.
High Grade 2-3	High infectivity: <ul style="list-style-type: none"> Crusts lower legs, buttocks, trunk OR 10% or more of TBSA Skin: Current or past heavy shedding. AND Chronicity: <ul style="list-style-type: none"> More than 3 prior hospitalisations for Crusted Scabies and/or depigmentation of legs/back or residual skin thickening/scaly skin (ichthyosis). 	Fortnightly Examine skin including buttocks	<ol style="list-style-type: none"> Encourage regular use of lactic acid/urea (Calmurid) and moisturiser on areas affected by past crusting. Apply Benzyl Benzoate from neck down fortnightly. As needed, apply Benzyl Benzoate immediately to any areas exposed to scabies (e.g. hands after visit of affected person).

4 CASE MANAGEMENT

If a Scabies Free Zone is compromised and a client is reinfested with scabies, consider the below points:

- Were all household and regularly visiting contacts treated for scabies?
- Were topical treatments applied to the entire body including hard-to-reach areas and as per manufacturer instructions?
- Was there a sufficient supply of topical treatments supplied to the household?
- Were there visitors who may have reintroduced scabies to the household? Sporting events, ceremonies and festivals all bring many visitors to communities and can reintroduce scabies to a Scabies Free Zone. It is crucial to provide sufficient topical treatments to the household to treat visitors.

Consider repeating household treatment and expanding it to include closely related households that could be a source of re-infestation.

If many households in the community have scabies, consider a Healthy Skin Day. See NT CDC Healthy Skin Program.

FOR MORE INFORMATION

For clinical advice consult the latest CARPA Standard Treatment Manual or Infectious Diseases specialists or Dermatology via the switchboards of Royal Darwin Hospital on 08 8922 8888 or Alice Springs Hospital on 08 8951 7777.

For information on this document contact One Disease www.onedisease.org,
contact@onedisease.org

Useful Scabies Resources

- Healthy Skin Program: Guidelines for Community Control of Scabies, Skin Sores, Tinea and Crusted Scabies in the Northern Territory, 2015 Edition (Centre for Disease Control, NT)
- Recognising and treating skin conditions, 2009 (Menzies School of Health Research)
https://www.menzies.edu.au/page/Resources/Recognising_and_treating_skin_conditions/
- Managing Households with Recurrent Scabies, 2017 Edition (One Disease)

This image shows a blank sheet of white paper designed as a notebook page. At the top, there is a solid blue horizontal band. Inside this band, the word "NOTES" is written in a large, white, sans-serif font. Below the blue band, the rest of the page is white and features approximately 28 thin, light gray horizontal lines spaced evenly apart, providing space for writing.

