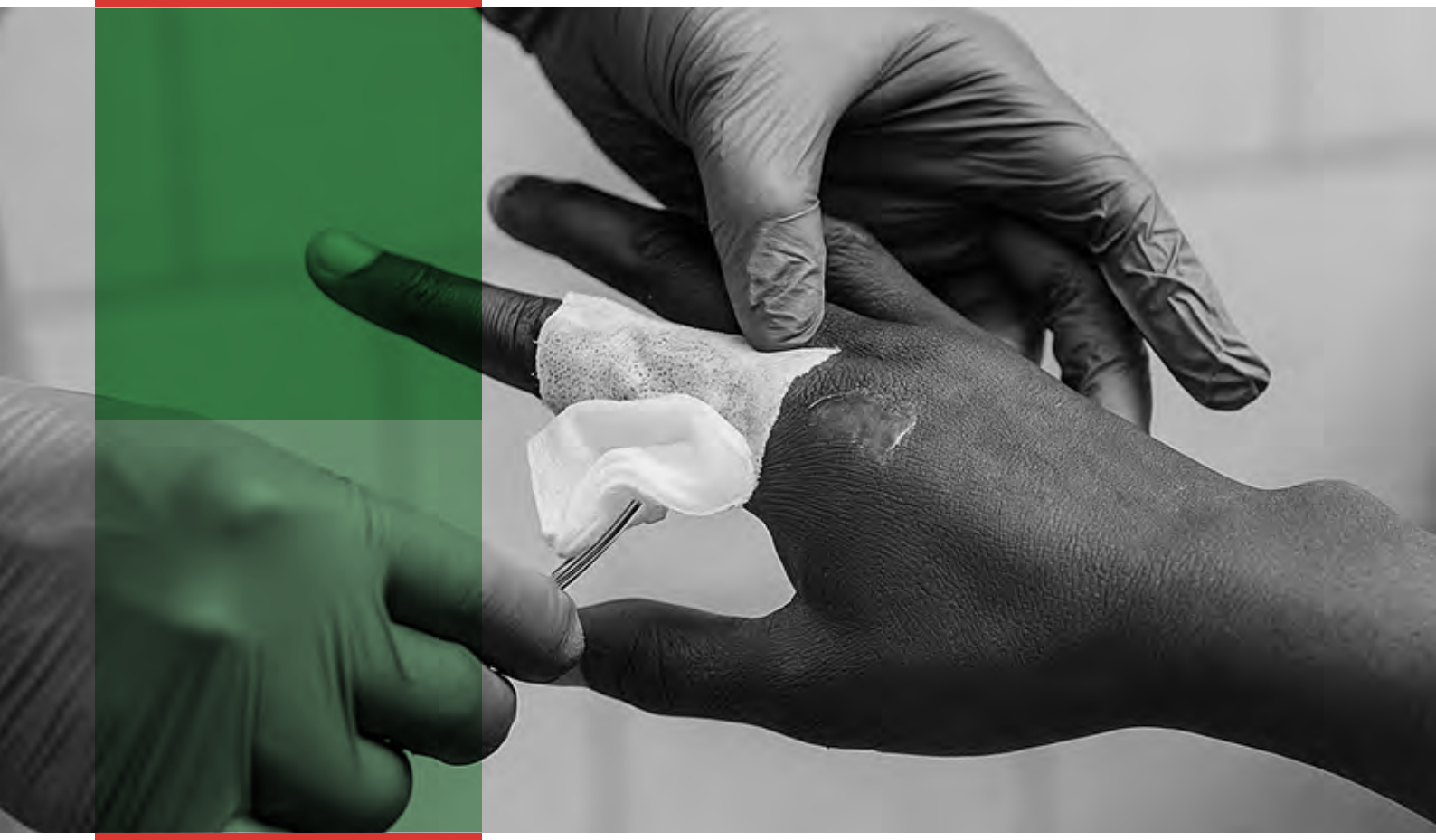


BURN INJURY

Community First Response Burns Care

TRAINING MANUAL

Uganda

MAKERERE UNIVERSITY

IMPERIAL

The George Institute for Global Health

Contents

Executive Summary

This manual is designed for Village Health Teams members working with the community to ensure timely first aid response and referral of burn patients. It highlights the burden of burn injuries, especially among children under 5 years living in low-resource settings in Uganda. It then describes the appropriate first aid for burn injuries and its importance. Early referral of burn patients to health facilities is also explained including the criteria for determining burns that require further care at health centers.

Makerere University School of Public Health in collaboration with Imperial College London, and The George Institute of Global Health; working with the communities in Kisenyi and Kasubi parishes in Kampala have studied first aid responses to burns and early referrals. Through this work, education and training were identified as key strategies to improve burn response behaviors.

Collaborating with the community, burn prevention and care experts, and local leaders, the research team developed this theory-based, context-specific Burns Training Manual. This manual provides an overview, usage guidelines, training content, and additional resources. Users are encouraged to adapt case studies to their local context for better uptake and application.

Citation: Gidwani, S., Barton, A., Tusiime, M., Osuret, J., Alenyo, R., Mazingi, D., Piragauta, A., Ssemugabo, C., Brown, J. and Peden, M. (2025) Community first-response burns care training manual.

Community First Response Burns Care Training Manual, Uganda.

Makerere University School of Public Health, Imperial College London and The George Institute for Global Health.

Acknowledgements

The burn care training manual was developed by Makerere University School of Public Health (MakSPH), The George Institute for Global Health (TGI) at Imperial College London (ICL), and the communities of Kisenyi and Kasubi Parishes in Kampala Uganda.

The following Makerere University School of Public Health staff members contributed to this burn care training manual: Charles Ssemugabo (Principal Investigator/MakSPH), Jimmy Osuret (Study Coordinator, MakSPH), Rose Alenyo (Co-Investigator/Burns Surgeon – Kiruddu National Referral Hospital) and Marcia Tusiime (Field Liaison Officer, MakSPH).

The following TGI/ICL staff members contributed to this burn care training manual: Margie Peden (Program Director, Injury Program, and TGI, UK), Dr. Shweta Gidwani (Senior Research Fellow, Injury Prevention TGI, and UK), Dennis Mazingi (Research Assistant, Injury Prevention, and TGI UK), Alejandra Piragauta (Research Assistant, Injury Prevention, TGI UK) and Alys Barton (Research Intern, Injury Prevention, TGI UK).

This burn care training manual was developed under the 'Designing a multifaceted, community-driven, behavioral change intervention to improve first response to childhood burns in Kisenyi Slum in Kampala Uganda (Cool-Burn20)' project with funding support from the Medical Research Council (Grant Number: MR/Y503265/1) and ISPF Global Development Hub ODA Project Accelerator Grant from ICL (Grant Number G24174).

All participants at the virtual and in-person workshops are acknowledged for their contributions to this burn care training manual and corresponding materials:

Content Experts: Dr. Sentongo Joseph (Representative, Burn Prevention & Wound Care Uganda), Dr. Galiwango George William (President, Surgeons Association of Uganda), Sr. Kyazike Irene (Kiruddu NRH), Dr. Kalanzi Edris (Kiruddu NRH), Dr. Wambi David (Kiruddu NRH), Isaac Kimbugwe (Red Cross, Uganda), Eric Edwards Ofwono (Red Cross, Uganda), Walyomu Richard (KCCA, Nakawa), and Edward Muganga (Ministry of Health).

Community leaders: Bbosa Edward (Chairperson), Mbabali George (Vice chairperson), Tuhairwe Annet (Secretary, Finance), Nassuna Caroline and Nabbanja Ruth.

Faith Based Organization leaders: Ahmed Hilal, Gerald Balaba Alireki, Kiberu Hassan and Nsubuga Haruna.

School Teachers: Nansumbi Beatrice, Namulinda Lamulah, Kimbugwe Isaac, Katongole Joseph, Kakungulu Robert, Kyomukama Immaculate, Takuwa Cissy and Nankindu Dorothy.

Village Health Team members: Mayanja Paul Ssali, Namugenyi Deborah Faith, Nakawunde Jesca, Kabali Bashir, Namata Angel, Ssentongo Gloria, Atuhaire Shifrah, Nabunya Amina, Nalubega Bernah, Namutebi Kevin, Namatovu Dorothy, Kavuma Amos, Bbosa Jannifer, Matovu Joseph, Kaddu Sarah, Nabunya Amina, Nambajjwe Christine, Makumbi Habib and Kavuma Amos.

Carers: Yiga Muhammed, Nakimuli Cissy, Nabakooza Resty, Katabarwa Matilda, Najjuma Veronica, Nantongo Fatumah, Muwanguzi Favour, Mugoya Philbert Eric, Tumwebaze Edson, Nalumu Diana, Wasswa Ali, Karugaba Jackline, Ssessazi Herman, Nakamatte Vivian Faith, Komugisha Amina and Ssekadde Suraq.

We confirm that explicit patient or guardian consent has been obtained in line with local ethical policies using the approved consent form in a language the patient understands. Where possible, guardians have reviewed the article or a clearly described version of its content and intended purpose of use prior to giving consent. The signed consent form is held by Dr. Rose Alenyo a member of the core research team.

We also wish to thank colleagues from the following organisations and multilateral agencies for their valuable contributions to the field of burn prevention and care. Their engagement and input have been instrumental to this work: WHO Uganda, UNICEF Uganda, Living Goods Uganda, Red Cross Uganda, Interburns, SEED Global, UK-Uganda Health Alliance, MoH Uganda, Plastic Surgery Surgeons Association, Uganda, Kiruddu National Referral Hospital, Burns Prevention and Wound Care, Uganda, Kampala Capital city Authority, Fire Safety Department, Kampala.

For authorship purposes: Shweta Gidwani, Alys Barton, Dennis Mazingi, Alejandra Piragauta, Jimmy Osuret, Rose Alenyo, Marcia Tusiime, Margie Peden and Charles Ssemugabo. 2025. Community First Response Burns Care Training Manual, Uganda. Makerere University School of Public Health, Imperial College London and The George Institute for Global Health.

Overview

1.1 Problem

Burns are a leading cause of injury in Ugandan children under five years of age, with most cases involving partial thickness burns, particularly among 1-4year olds, according to hospital studies. In slum communities, first aid for burns often involves using materials such as urine, water, oil, peelings, cassava, and honey.

The living conditions in Ugandan slums increase the risk of burns, as many children are exposed to open fires. Addressing this, the COOL-BURNS project co-developed a culturally relevant training manual with local experts. The manual includes content, trainer and learner materials, and implementation processes. It also outlines the co- design methodology for adaptation to other settings based on local needs assessments.

1.2 Why was this training manual developed?

This training manual was developed in response to community members, subject matter experts, and stakeholders voicing their concerns and personal experiences on the state of burns care in Ugandan slum communities. Many individuals willing to share spoke about their experience with burns:

VHT: A 2year old child was playing on the verandah. They fell into a pot of porridge head first. The community responded with first aid based on local practices applying sugar, water, oil and then 'immunizing' the baby with urine. 12 hours later the child had severe blistering and was taken to burns referral. The child is home and well now but has disfiguring scars.

This VHT expressed that they had never received training on burns and were grateful for this initiative. They now felt empowered to raise awareness to change practices in the community.

This training manual aims to inform, empower, and engage VHTs and local providers to perform effective burns care and share this knowledge with the community.

1.3 Who is it for?

This burns training manual can apply to all different levels of providers within the Ugandan healthcare system: community first responders, first response health workers, village health teams (VHTs), nurses and doctors. This training was co-created and designed to work within local context, therefore it is adaptable and can be relevant to differing provider levels.

1.4 Joint Vision Statement

We are committed to improving community burn care response through the collaborative design and implementation of comprehensive community training. Our shared mission involves working with key stakeholders to enhance burn prevention and elevate the quality of first response burns care. By valuing diverse perspectives, ensuring contextual relevance, and enhancing knowledge and skills, we aim to make an impact on burn care in children in Ugandan communities.

How to use this manual

To effectively use this burns training manual, the approach should be adaptive and tailored to the local community's needs.

This manual is context specific and in the following sections we describe the context and framework used to develop this manual.

Below are the suggested steps to consider so that the manual can be used to its full potential:

- **Conduct a Needs Assessment:** Begin by gathering information about the specific knowledge gaps, cultural practices, and healthcare challenges related to burns in the local community. This assessment informs how much time is allocated to each section of the manual and which content areas are prioritised.
- **Co-Design for Cultural Relevance:** Collaborate with local healthcare providers, community leaders, and stakeholders to adapt the content. Ensure the training materials respect cultural norms, traditional healing practices, and local beliefs. This collaboration increases buy-in from the community and enhances the relevance of the training.
- **Structure and Engagement:**
  - » **Knowledge + Activities:** The manual's structure alternates between delivering key information and engaging participants with practical activities. This format allows learners to apply theoretical knowledge through discussion, problem-solving exercises, and real-world scenarios. These activities should be designed to stimulate critical thinking and local application.
  - » **Discussion and Contextualization:** Encourage active discussions that allow trainers and learners to relate the content to their daily work and experiences with burns. This fosters a deeper understanding and promotes a shared learning environment.
- **Additional Resources:** This section includes extra reading materials, visual aids and references to additional training modules. These resources offer flexibility and depth for trainers to customize the program to their learners needs.

This manual aims to be dynamic and interactive, ensuring that the local context shapes the learning process while maintaining a standard of care for burn management and prevention.

Sections

Training Content

Section 1: Why are burns in children dangerous?

Section 2: What to do after a burn occurs?

Section 3: How to cool the burn?

Section 4: Why to cool the burn?

Section 5: How to protect the burn?

Section 6: How to assess the burn?

Section 7: What are 'special' burns?

Section 8: When to refer?

Section 9: How to refer?

Additional Resources

A. Psychological support

B. Burn prevention for children

C. House fires and rescue phase

D. Practical skills

Training Content

Section 1 Why are burns in children dangerous?

Learning Objectives: Understand and describe the unique challenges associated with burns in children. Understand and describe the triad of risk of childhood burns.

Story: A woman was boiling pineapple juice on an unstable cooking stove. The hot juice fell on a child and burnt a large area of their body. The child died two days later.

KEY LEARNING POINTS

- **Higher chance of death:** Children are at a higher risk of dying from burns, Because of their smaller size and larger body surface area.
- **Greater fluid loss:** Children lose fluids faster because of their body size, which can quickly lead to shock and other serious problems.
- **Thin skin:** Children have thinner skin than adults. This means that a burn can be much more severe even if the temperature is lower and the contact time with the skin is shorter.
- **Higher chance of infection:** Burns damage the skin, making it easier for infections to occur. Since children's immune systems are still growing, they are more likely to get infections.
- **Nutritional demand:** Children require more calories and nutrients to heal. Meeting these nutritional needs can be challenging, particularly in resource- limited settings.
- **Long term consequences:** Burns can cause lasting physical and emotional damage, like scars and trauma. These effects can impact a child's growth and quality of life.

Learner Activity: Ask the group to share a story of an incident related to a burn injury in a child. Next discuss what are the most encountered burn agents for children?

You can generate conversation with the following examples:

- Hot liquids
- Contact with hot vessels in the kitchen
- Open fire cooking on unstable stoves
- Falling into hot liquids
- No demarcation of cooking and playing area
- Candles near nets

Burns occur more commonly in children due to a dangerous combination of three factors called the **triad of risk** for childhood burns. These factors are:

1. **Young Age (Child Under 5):** Children under 5 years old are naturally curious but lack the understanding of danger, making them more vulnerable to accidents.
2. **Lack of Supervision:** Without adult supervision, young children are more likely to encounter and interact with hazards that can cause burns.
3. **Hazardous Environment:** Common hazards like hot liquids, open flames, unstable cooking stoves and electrical outlets are often present in the home environment, posing a significant risk to unsupervised young children.

When these three factors combine, the likelihood of childhood burns increases dramatically.

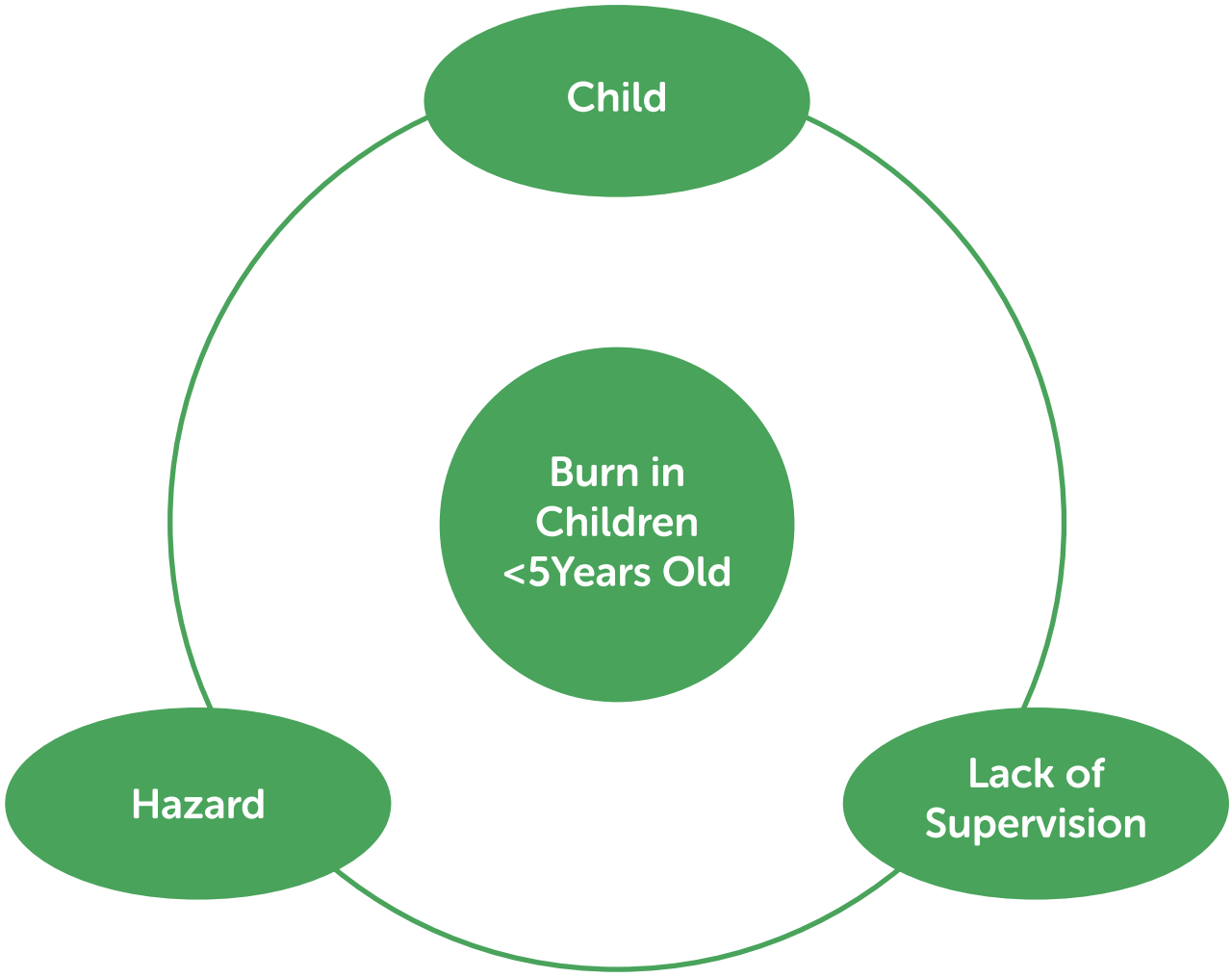


Fig. 1 Risk Triad for Childhood Burns

Section 2. What to do after a burn occurs?

Learning Objective: Describe what to do immediately after a burn occurs.

Story: "A child stepped in a saucepan of hot oil on the floor outside their neighbors' house. Sugar was put on the child's burns. Their feet became swollen and blistered. They were taken to clinic for dressing and took one month to recover."

KEY LEARNING POINTS

- **Stop the Burning Process:** Remove the person from the source of heat. Extinguish flames, remove hot objects, or shut off electricity.
- **Continuously pour water on the Burn:** Immediately pour cool running water for at least 20 minutes. Avoid ice, cold or hot water as it may cause further tissue damage. Proper cooling can significantly reduce pain, inflammation, and the risk of deeper tissue damage. It can also improve healing outcomes and reduce the likelihood of scarring.
- **Protect the Burn:** Cover the burn loosely with a clean cloth or non-stick dressing. Do not applying creams, oils, or butter.
- **Assess the Burn:** Consider the size of the burn using the palm method. This helps you to know whether to refer or not.
- **Prevent Infection:** Keep the burn clean, but avoid bursting any blisters. If blisters burst, clean apply an antibiotic, put gauze and a clean bandage.
- **Hydration:** Ensure the person drinks plenty of fluids, especially if the burn covers a large area, to prevent dehydration.
- **Pain Management:** Pain relievers that are easily available like paracetamol, ibuprofen tabs or solutions can help manage pain.

Section 3. How to cool the burn?

Learning Objective: Describe how to cool the burn

Story: "A child stepped in a saucepan of hot oil on the floor outside their neighbour's house. Sugar was put on the child's burns. Their feet became swollen and blistered. They were taken to clinic for dressing and took one month to recover."

KEY LEARNING POINTS

What to use?

Use clean running **not COLD water.**

From where can you get clean, cool running water near you? How to cool? - Practical tips

- Encourage parents to help (e.g. take, tear, or cut off clothes off if possible).
- Pour clean cool water to irrigate the wound from a jug, jerrycan or tap at low pressure.
- Dip hands in and out of bucket of clean water poured from jerry can.
- You can start with a clean cloth dipped in clean water then gradually switch to directly cooling burn with water.
- Partial cooling: If a large portion of the body is burned, avoid cooling the whole body at once, as this could cause hypothermia. Cool smaller areas at a time.
- Focused cooling on the most severely affected areas, as prolonged cooling over large areas might lead to a drop in body temperature, especially in children or the elderly.

** Remember - If this is a chemical burn, collect the run off water in a bucket as it also has dilute acid which can cause irritants to others **

How long to cool ?

Cool the affected area under running water for **at least 20 minutes**. This helps to dissipate heat, reduce pain, and limit the depth and spread of the burn.

When to start cooling?

Act Quickly: The sooner you begin cooling the burn, the better the chances of reducing the severity of the burn. Immediate cooling is most effective within the first 30 minutes but can still offer benefits up to 3 hours post-injury.

What about Ice?

Do not use Ice or Ice-cold water or water from the refrigerator as it reduces the blood supply to the burn area leading to more damage. There is also a chance of hypothermia especially in larger burns or in children.

What to do after cooling for 20mins?

Gently pat the area dry and cover the burn with a clean cloth that does not stick to the burn.

Learner Activity: Ask learners to participate in a role-play activity to showcase how to cool a burn. Begin the activity by setting the scene where the burn learner portraying the child who was burned occurred. Allow for learners to portray different scenarios showing the positive or negative impact of cooling the burn.

Example scenario: A child stepped in a saucepan of hot oil on the floor outside their neighbor's house. Sugar was put on the child's burns. Their feet became swollen and blistered.

Section 4. Why cool the burn?

Learning Objective: Describe the risks and adverse effects that can occur if a burn is not cooled.

Story: "A father of child under 5 is the first to respond to a child who has just spilled hot bean soup on her leg. The father has heard about first aid and quickly responds by cooling the burn under running water for 20 minutes. Later he wonders what are the risks of not cooling the burn?"

KEY LEARNING POINTS

Why cool the burn?

- Limits Scaring
  - » Cooling the burn as quickly as possible helps stop the burning process and prevents the heat from penetrating deeper into the skin and below.
- Reduces Pain
  - » Cool water soothes the burn, reducing the pain later on.
- Improves Healing
  - » Cooling the burn can reduce swelling, which helps prevent complications and improves healing.
- **Prevents making the burn worse**
  - » Without cooling, a burn can continue to worsen for several minutes, leading to deeper tissue damage. Proper cooling stops this progression.
- Reduces risk of infection and swellings
  - » Cooling cleanses the burn area, removing debris and contaminants, making it safer to apply a dressing and reducing the risk of infection.

Section 6. How to assess the burn?

Learning Objective: Demonstrate understanding of sizing and explain its importance. Understand depth classification and be able to recognise based on visual presentation

KEY LEARNING POINTS

Total body surface area (TBSA) is measured in percentage and used to describe the size of a burn. A minor burn is **<5 % TBSA**.

Palmar method: The palmar method measures the TBSA of the burn by assigning the patient's palmar surface to be an estimated 1% of their TBSA. This method is especially useful when the burn is small and/or patchy.

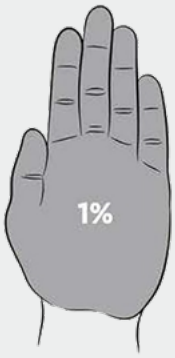


Fig. 2 Palm and fingers of patient =1%
Image courtesy of ACI Statewide Burn Injury Service

Three depth classifications: Superficial, Partial Thickness and Full Thickness

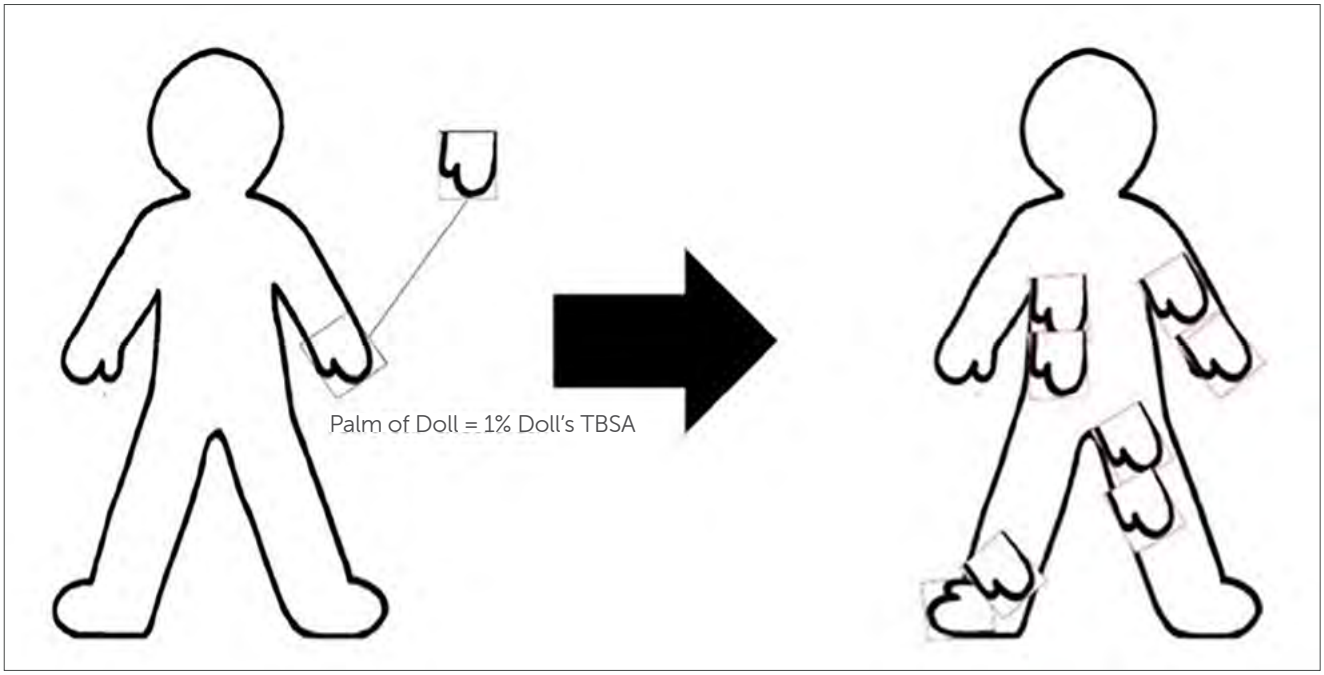
Burn Depth	Skin Findings
Superficial	• Painful, red or pink color • Intact, no blisters • When pressed, skin is pink • with quick capillary refill
Partial Thickness	• Painful, red or mottled red • Intact or broken blisters, wet • When pressed, may temporarily turn white then red colour returns
Full Thickness	• White or black, leathery and dry • No sensation • When pressed, no change in colour

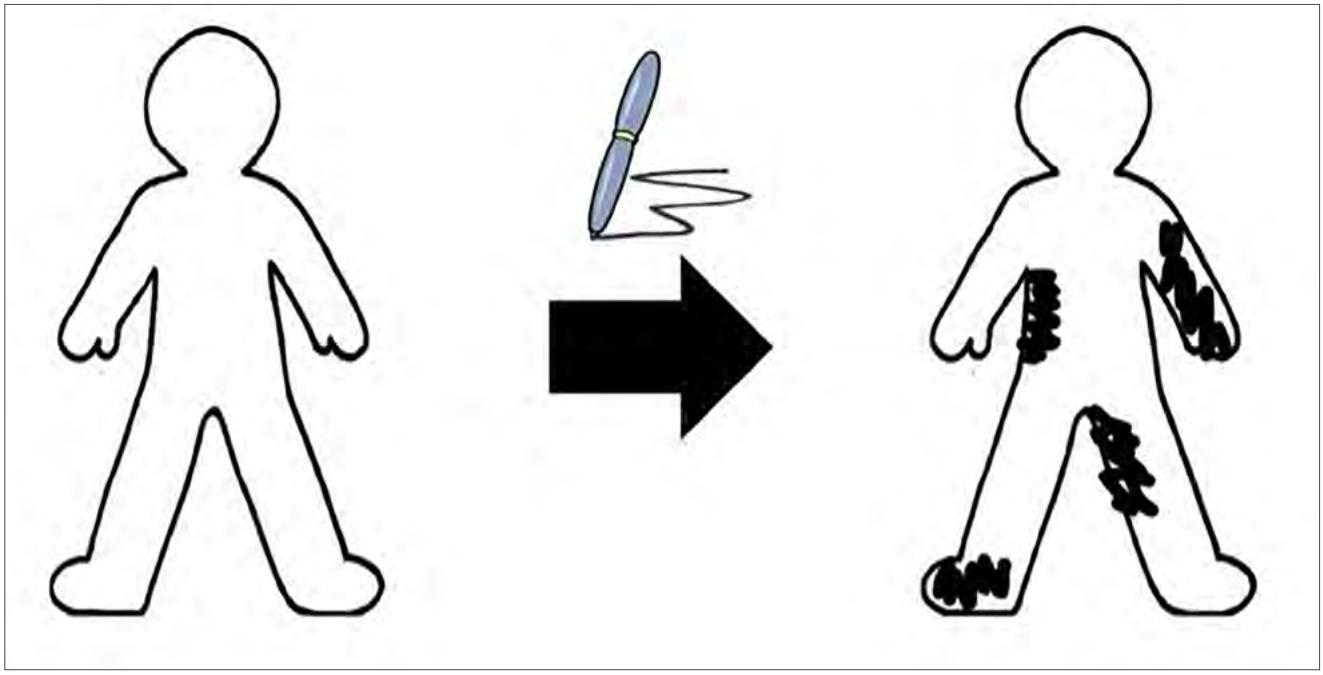
What can affect the depth of a burn?

The amount of time the skin is exposed to the burn agent and the temperature or strength of the agent itself can affect the depth of the burn.

Learner Activity: Take a doll and mark with pen where the burns are present. Ask learners to estimate the burn area using the palm of the doll (1% TBSA). Reference the diagram below.

In this example, the burn TBSA% is only reffering to the front of the doll. The exercise is meant to help practice the skill of sizing a burn not accurately resemble human body proportions.





In this example, the doll's burns cover 8% TBSA as each patch of burned tissue can be sized up with 8 of the doll's palmar surfaces (palm and fingers).

Section 7. What are 'special' burns?

Learning Objective: Identify the specific risks of each type of burn and demonstrate

Story: "A child was playing while porridge was being cooked in the verandah. The child got porridge on their hand and forearm and burned. The burn was cooled with water for 30 mins but because it was a special area the VHT referred to district hospital"

KEY LEARNING POINTS

Special burns are burns that require special attention because they involve important body parts or can result in complications:

Areas: Feet, hands, genitals, face, circumferential burns

1. **Feet and Hands:** Burns to these areas can result in significant functional loss. Scarring, contractures, or nerve damage can impair mobility, dexterity, or fine motor skills.
2. **Genitals:** Burns in this area pose risks of infection, affects vital organs for excretion of urine ans stool, long-term sexual dysfunction, and psychosocial impacts.
3. **Face:** Facial burns can affect vision, breathing, and cause severe disfigurement, necessitating careful management and rehabilitation.
4. **Circumferential burns:** Burns encircling a limb or torso can cause compartment syndrome by restricting blood flow, potentially leading to tissue damage or even amputation.

Agents:

1. **Chemical burns:** Acid burns require immediate irrigation to stop ongoing tissue damage, and careful consideration must be given to avoiding further injury from runoff water.
2. **Electrical burns:** These can cause deep tissue damage not immediately visible, and have the potential to disrupt cardiac rhythm and other organ systems.
3. **Hot smoke:** Exposure to hot smoke like in a house fire can cause inhalation injury which include singed nasal hair, coughing up black sputum, change in voice which may indicate hot smoke may have entered the lungs. This can cause swelling inside causing difficulty in breathing and needs urgent hospital transfer before this occurs.

Learner Activity: Ask learners to describe different their experience with special burns. Which agents did they come across the most?

Did they do anything differently when they came across a patient with a burn in one of those four areas (feet/hands, face, genitals, circumferential)?

Section 8. When to refer?

Learning Objective: Outline a decision-making pathway for referral and show successful application.

Story: "There was a burn on a child's leg that a VHT didn't know what to do with. They attended a workshop to learn about when to refer and then went back to track that family down. They had moved but the VHT eventually tracked them down to check on the child. The VHT recognized a deep and special burn. They referred but also actively took the mother and child to the referral hospital as the mother was worried about how they would be received at the referral center. This VHT showed both dedication and courage."

KEY LEARNING POINTS

These situations always require a referral to a higher **center**

- Burns >5% total surface area = 5 palm
- 'Special' burns (See Section 5: What are 'special' burns?)
- House fires or when smoke inhalation
- Burns with additional trauma
- Patient is very young or elderly
- Provider discretion (e.g. child with epilepsy and burn, unwell and burn, trauma and burn, violence, intentional burn)

When the VHT is unsure and injury appears unique.

More severe burns may require referral to a burns specialist center.

Learner Activity: Give learners different case scenarios and ask whether they would refer the patient and why.

Section 9. How to refer?

Learning Objective: Outline a decision-making pathway for referral and show successful application.

Story: There was a burn on a child's leg that a VHT didn't know what to do with. They attended a workshop to learn about when to refer and then went back to track that family down. They had moved but the VHT eventually tracked them down to check on the child. The VHT recognised a deep and special burn. They referred but also actively took the mother and child to the referral hospital as the mother was worried about how they would be received at the referral centre. This VHT showed both dedication and courage

KEY LEARNING POINTS

What information should always be included on a referral form

Patient name

Where to refer?

In order to correctly refer, one must understand the health system. Uganda's health system follows this flow of care:

Fig. 3 Ugandan Health System

Step	Assesment	Status		Action
Step One	What is the age limit of the child?	Child is less than 1 year	Yes →	Refer to Health facility
		↓ No		
Step Two	What was the cause of the burn?	Caused by: • Chemical • Electrical • Hot smoke • Lightning	Yes →	Refer to Health facility
		↓ No		
Step Three	Where is the child burnt?	Feet, hands, genitals, face, circumferential burns, joints	Yes →	Refer to Health facility
		↓ No		
Step Four	Health status of child	Other injuries, epilepsy, violence, intentional burn	Yes →	Refer to Health facility
		↓ No		
Step Four	Depth of wound	deep partial thickness burns	Yes →	Refer to Health facility
		↓ No		
Step Four	TBSA of burn	More than 5% = 5 palms	Yes →	Refer to Health facility

Fig 4: Burns referral tool guide

Learner Activities: Go through the process of filling out the Ministry of Health referral form for a given case.

Trainer Guide: HMIS VHT 001 - VHT Referral Form

MINISTRY OF HEALTH

HMIS VHT 001:
VHT REFERRAL FORM

PART I

Date: ...../...../.....

Name of Health facility referred to .....

Village (LC) .....Parish .....

Sub county:.....District: .....

Patient Name:.....

Age: ..... Sex: Male ☐ Female ☐ Household Number:.....

I have referred to you this patient for the following reason(s) /Complaints:

1.....

2.....

3.....

4.....

Action already taken .....

.....

VHT Name:... ..... Signature.....

PART II

(To be completed at the referral site and given back to the patient)

Date: ...../...../.....

Name of the patient: .....Diagnosis: .....

Description of follow- up care needed

1. .....

2. .....

3. .....

Date when the patient should return to the health unit: .....

Name of the Health worker: ..... Signature:.....

(Print Version September, 2019)

Fig 5: Document courtesy of Ministry of Health Uganda

Additional Resources

A. Psychological Support

Learning Objective: To help children cope and carers cope with social anxiety and stigmatization.

KEY LEARNING POINTS

Changes in appearance from scarring, physical discomfort (e.g. pain, itching, limited range of motion), thinking about the event itself, and concern for impact of injury on family members are common contributors to psychological distress.

Psychological support through counseling is an important piece to burn care.

Victims should be helped to seek psychological support from existing structures within the community such as:

- VHTs
- Health Facility
- Community based organizations

B. Burn prevention for children

Learning Objective: Recognize and employ effective prevention measures.

Story: I will start by saying that we are in slum areas where some use electricity to cook, some gas others charcoal. Most times there are people who are responsible for wiring and distribution of power. There are landlords who allow people to cook using electricity then those who don't allow. So it's our responsibility to tell children what to touch and what not to touch. We need to always have discipline of putting out the fire whenever we finish cooking and avoid putting the charcoal stove in the house. We have foods like beans and offal's whereby if you cook them from the house, they can cause suffocation, so it's our responsibility as leaders to sensitize our people that one careless person can burn many houses around him. So that's our role as leaders.-Leader of Fath Based Organization.

KEY LEARNING POINTS

What are some effective forms of burn prevention?

- Stable Sigri
- Barriers around open flame cooking
- Separate and demarcated play and cooking areas

What are high risk behaviors for burns that prevention methods should target?

- Candles should not be lit near bedside and loose cloth (e.g. mosquito nets)
- Indoor cooking can lead to smoke inhalation and confusion (due to CO2) or individuals can even become unconscious. This can lead to a fire.
- Babies in slings on the back of mothers. Mothers can bend over while cooking and the baby can fall out.

Learner Activity: On paper (individual activity) or using a whiteboard (group activity) ask learners to list hazards that they have encountered.

Suggested discussion questions:

- Which hazards are more common than others?
- Are certain settings more likely to have hazards?
- Do any factors lower or increase the risk of these hazards? (e.g. parental supervision, weather conditions)

C. House fires and rescue phase

Learning Objective: Identify and model effective rescue techniques.

Story: Red cross identified and trained in first aid and those of us who were able received standard advanced training for fires and burn injuries. You were then able to offer first aid skills to somebody with burns, who has fainted, who has gotten cardiac arrest, etc. These volunteers then go to schools and communities to educate them on first aid.

KEY LEARNING POINTS

How do you remove the source of the burn?

- Stop, drop, and roll
- If it is a dry chemical burn, brush off the substance ensuring that you do not put
- yourself at risk of coming into direct contact and then irrigate
- If it is a wet chemical burn, irrigate immediately with running water
- Remove any burning clothing unless it is stuck to the burned tissue

House fires

- Smoke inhalation can cause inhalation injuries

Learner Activity: Ask the learners to participate in a scenario to practice the rescue phase. Make sure that the learners can vocalize why they are taking certain actions and how they are ensuring that the scene safe.

D. Practical Skills

Learning Objective: Practice first aid skills and be able to reproduce.

Story: I was not even at home but my maid knew because I told her what to do. So, the young boy came, played around with the petrol. I didn't know my husband had put petrol somewhere. So, as we were burning rubbish, it burst and burnt the boy. But the maid knew what to do, so she put the boy in the drum of water. So, they called and told me, the boy has gotten burnt, he was taken to a nearby facility, after some time, but at least she knew what to do. And the extent was not so bad.

KEY LEARNING POINTS

Visuals of dressings: clean plastic bag taped, clean cloth

Activity 1. How long is 20 minutes? Ask one learner to pour water on a dummy while another learner times the event. Task the learners unaware of the time to blindly estimate when the cooling has reached 20 minutes.

TRAINER GUIDE

Materials to use: Dummy child, 5-liter jerry, jug or cup, basin, clean cool water Keep in mind:

- Do use a tap at high pressure
- Discard water from acid burn safely
- Use clean cool water

Activity 2. Demonstrate how to dress a burn. Ask learners to practice dressing another learner first according to the diagram and next without referencing any materials.

TRAINER GUIDE

Materials to use: clean plastic bag, clean cloth, plastic wrap Keep in mind:

- Do not wrap to tight to allow for adequate bloodflow and mobility

Here are some examples of hazards in an urban slum community in Kampala, Uganda

Can you describe what could happen if an unsupervised child under 5 years was to encounter this hazard while playing nearby with a ball?

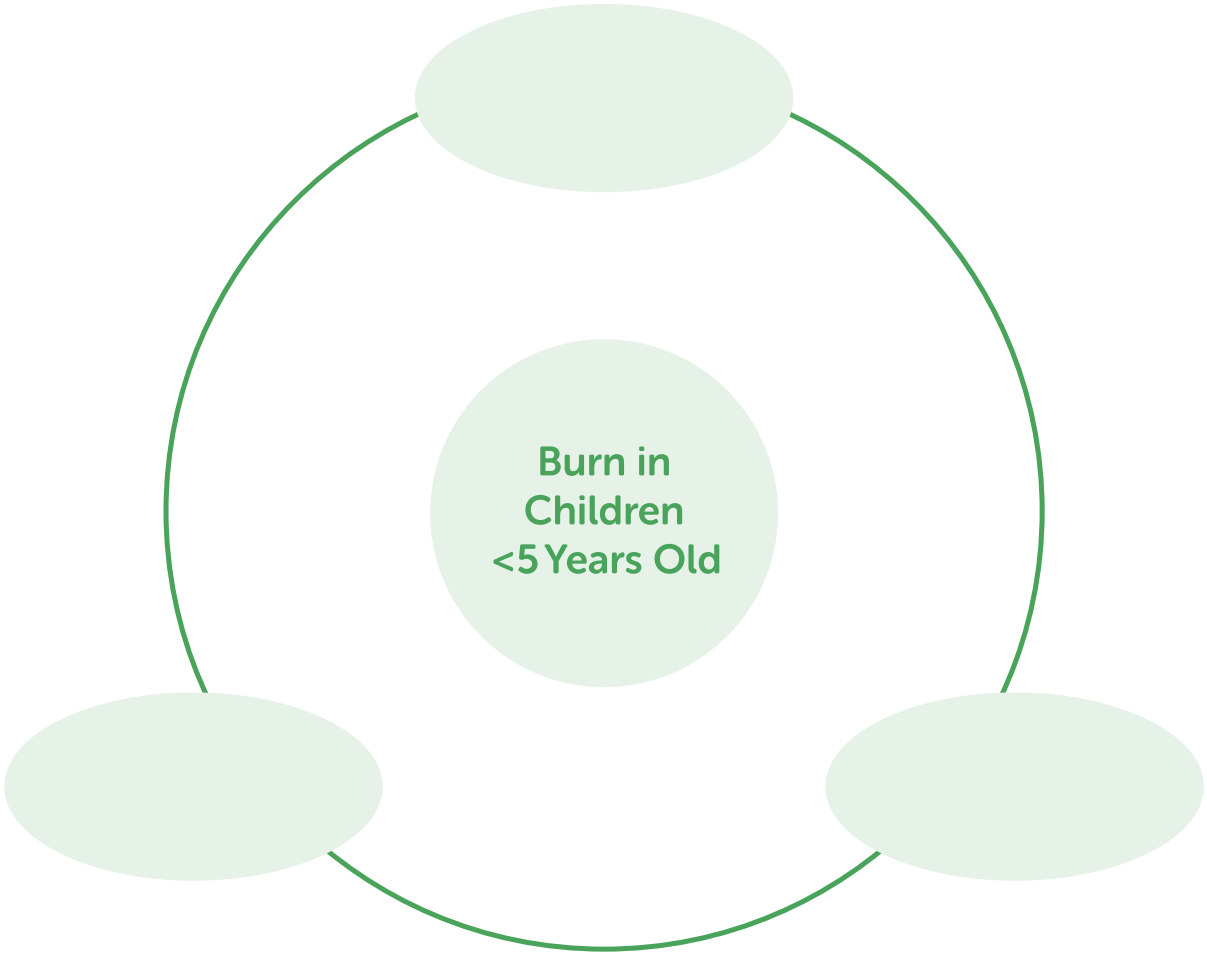
Cooking on an unstable sigiri
Photographs courtesy of Cool Burns project

Open flame cooking
Photographs courtesy of Cool Burns project

No separation of play and cooking area
Photographs courtesy of Baby Box project

Risk Triad for Childhood Burns

Fill in the missing information for the risk triad and describe how each factor by itself and the combination of the three factors contributes to the risk of childhood burns.



Read the stories below and answer the corresponding questions.

A child stepped in a saucepan of hot oil on the floor outside their neighbor's house. Sugar was put on the child's burns. Their feet became swollen and blistered. They were taken to clinic for dressing and took one month to recover.

What was done well?

What could have been done differently?

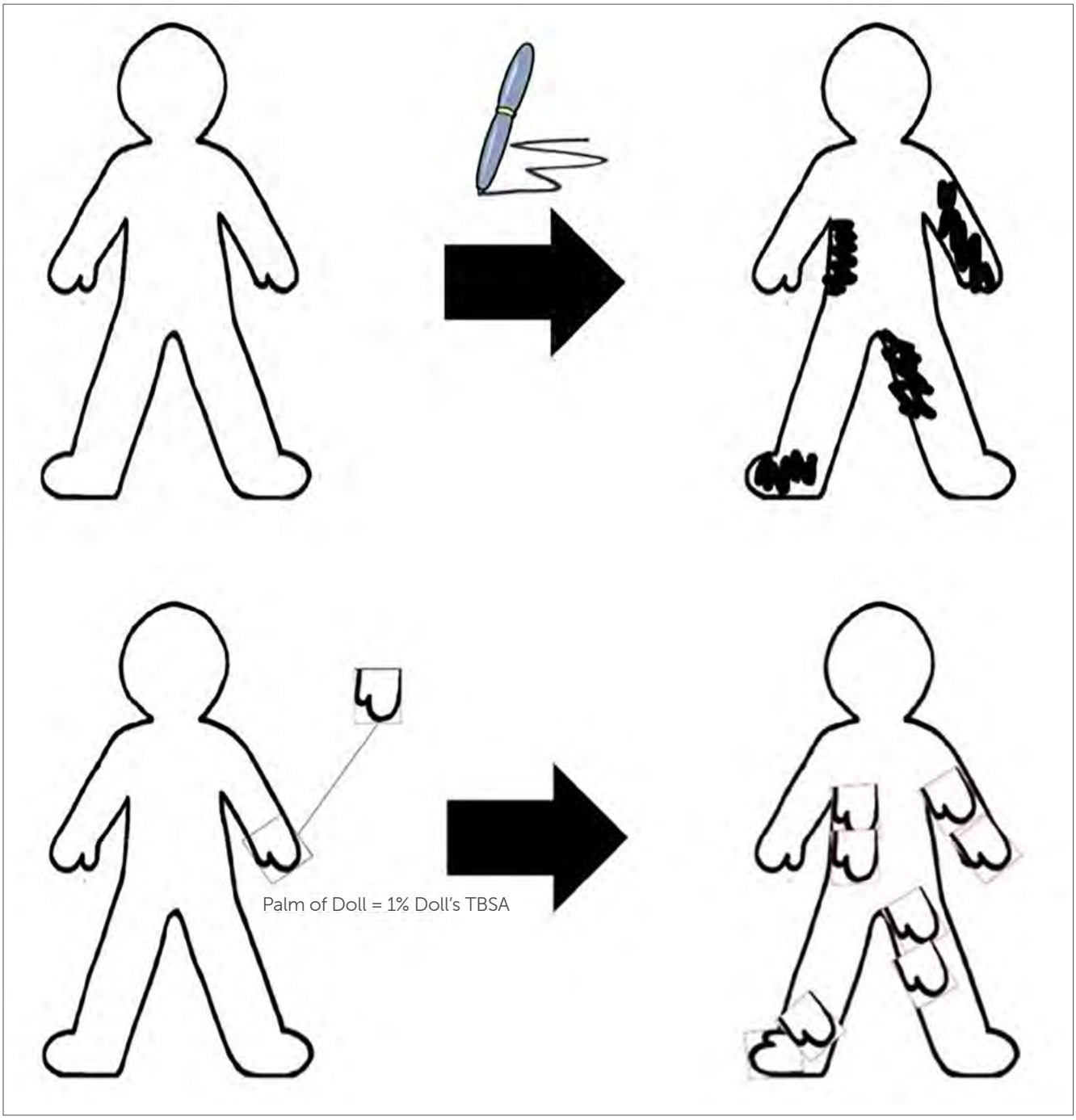
Number the scenes in the order you think would provide the best care for the burn.

Reference the video that the scenes were taken from to check your answer.

1 2 3 4

Diagram of Burn Sizing Using a Doll

In this example, the burn TBSA% is only refering to the front of the doll. The exercise is meant to help practice the skill of sizing a burn not accurately resemble human body proportions.



In this example, the doll's burns cover 8% TBSA as each patch of burned tissue can be sized up with 8 of the doll's palmar surfaces (palm and fingers).

Match the images of burns to the different depth classifications (superficial, partial thickness, full thickness). Give a short description of how you chose to classify the burn.

☐ Superficial ☐ Partial thickness ☐ Full thickness

☐ Superficial ☐ Partial thickness ☐ Full thickness

☐ Superficial ☐ Partial thickness ☐ Full thickness

Photograph courtesy of Burns Unit, Kiruddu NRH

Images converted to sketches using ChatGPT and Sora

Burn Classification

Burn Depth	Skin Findings
Superficial	• Painful, red or pink color • Intact, no blisters • When pressed, skin is pink • with quick capillary refill
Partial Thickness	• Painful, red or mottled red • Intact or broken blisters, wet • When pressed, may temporarily turn white then red colour returns
Full Thickness	• White or black, leathery and dry • No sensation • When pressed, no change in colour

Fig. 1 Superficial Burn

Photograph courtesy of Burns Unit, Kiruddu NRH

Fig. 2 Partial Thickness Burn

Photograph courtesy of Burns Unit, Kiruddu NRH

Fig. 3 Full Thickness Burn

Photograph courtesy of Burns Unit, Kiruddu NRH

Images converted to sketches using ChatGPT and Sora

For each case study, decide whether to refer the patient and briefly describe why or why not.

Case #1: You are called to a superficial burn across both legs of a child front and back. There are no blisters.

☐ Refer Patient ☐ Do not refer patient

Case #2: The patient reports a story of inhalation, there are no burns visible, and there is a change in voice.

☐ Refer Patient ☐ Do not refer patient

Case #3: A baby is brought to you with burns involving the face.

☐ Refer Patient ☐ Do not refer patient

For each case study, fill out the VHT referral form.

Case #1

Case #2

Case #3

Example completed VHT referral form for Case #1.

Part I

Date:

Name of Health Facility referred to:

Village (LC): Sub county: Parish:

Patient Name: District:

Age: Sex: Household Number:

I have referred to you this patient for the following reason(S)/Complaints:

Action already taken:

VHT Name: Signature:

Example completed VHT referral form for Case #2.

Part I

Date:

Name of Health Facility referred to:

Village (LC): Sub county: Parish:

Patient Name: District:

Age: Sex: Household Number:

I have referred to you this patient for the following reason(S)/Complaints:

Action already taken:

VHT Name: Signature:

Example completed VHT referral form for Case #3.

Part I

Date:

Name of Health Facility referred to:

Village (LC): Sub county: Parish:

Patient Name: District:

Age: Sex: Household Number:

I have referred to you this patient for the following reason(S)/Complaints:

Action already taken:

VHT Name: Signature:

Capacity Building Framework

This participatory co-design framework showcases the methodology and process of the co-creation of a training curriculum for burns in Ugandan slum communities.

Needs Assessment — Co-Creation — Implementation — Documentation

Needs Assessment

FIND, COMPILE, SUMMARIZE, AND REPORT THE EPIDEMIOLOGY OF THE INJURY

AIM

To discover the focus of training material based on the burden, geographic location, social determinants, and current risks.

QUESTIONS

- What is the morbidity and mortality of this injury in this setting?
- What are the current attitudes towards and practices in response to this injury?
- What population is most affected by this injury or type of response to this injury?
- What quantitative data is there on this injury?

OUTPUT(S)

An epidemiological analysis to inform gaps, needs, and allow for discussion with SMEs/stakeholders on missing or incorrectly weighted information.*

PERFORM A LITERATURE REVIEW ON EXISTING TRAINING AND MATERIALS.

AIM

To understand the concentration of published and public materials and find the gaps in current literature while recognizing the limitations to desk based searches.

QUESTIONS

- What delivery methods are most common?
- What is the focus of published literature (e.g. content, current practices, need for training, prevalence of injury...)?
- Is the existing material culturally and contextually relevant?
- What was the setting and target population of the literature or intended materials?

OUTPUT(S)

- A collection of literature for reference and further analysis
- Evidence synthesis on gray literature and peer-reviewed literature presented in succinct format to bring to discussion with SMEs/stakeholders
- Scoping review: This literature review can inform and become a scoping review or systematic review depending on the injury/topic at hand.

CONDUCT AN INITIAL VIRTUAL WORKSHOP WITH KEY STAKEHOLDERS AND SMES

AIM

To gather in-depth insight from participants on personal experiences, perspectives, practices, needs, preferred delivery methods, and cultural context.

QUESTIONS

- Do you have any experience, incidents, or case stories related to injury management or prevention that stuck with you? What were the key issues or successes?
- How can stakeholders (e.g. healthcare providers, government, NGOs) collaborate more effectively to improve injury management and prevention?
- What efforts are currently in place to educate the public about injury prevention?
- From your perspective, what are the needs in first aid, response, and prevention training for the community?
- What specific training content do you believe is essential for effective rescue, first aid, and prevention?
- Which training delivery method do you prefer for a training program?
- Which language should the program be in?

OUTPUT(S)

Thematic transcript analysis and summarization of key inclusion categories for co-creation of training curriculum.

Co-Creation

DESIGN/DEVELOP A TRAINING CURRICULUM BASED ON THE EPIDEMIOLOGICAL ANALYSIS, EVIDENCE SYNTHESIS, AND WORKSHOP ANALYSIS.

AIM

To create a curriculum informed by the needs assessment to present for further feedback with stakeholders/SMEs and those expected to receive the training

QUESTIONS

- What are the learning objectives?
- How can we incorporate local knowledge and practices into the training materials?
- How can we keep the material brief and effective?
- Where is visual representation important and how can participants be included in the image creation?
- What is the intended delivery method?

OUTPUT(S)

Prototype curriculum tailored to setting and expected trainers/trainees

CONDUCT A COMMUNITY WORKSHOP TO GAIN FURTHER INSIGHT ON INJURY AND DEVELOPING TRAINING.

AIM

To build on the themes from the initial workshop with additional focus on any missed or briefly discussed questions to create a more complete understanding of needs. To engage community trainees in the developing process.

QUESTIONS

- Which training delivery method do you prefer for a training program?
- Do you have any experience, incidents, or case stories related to injury management or prevention that stuck with you? What were the key issues or successes?
- From your perspective, what are the needs in first aid, response, and prevention training for the community?

OUTPUT(S)

- Community perspective analysis to implement in the co-creation of prototype curriculum
- Engagement with community members expected to receive training

CONDUCT A SERIES OF IN-PERSON WORKSHOPS ON THE IMPLEMENTATION OF THE TRAINING CURRICULUM WITH COMMUNITY PARTICIPANTS

AIM

To guide training with potential instructors (stakeholders/SMEs) and trainees (VHTs, community members, lower level health workers) and get feedback on delivery and receival of material.

QUESTIONS

- What content was most engaging and seemingly relevant?
- What did participants find lacking or necessary for clarification?
- Where did most questions arise?
- Were visuals relevant?
- What were the assessment results and how did that reflect the overall result of the workshop?

OUTPUT(S)

- Initial evaluation on implementation of training curriculum intervention
- Framework of co-creation process
- Concrete training curriculum
- Engaged and informed community members on injury

Documentation

MEET WITH THE RESEARCH TEAM TO COORDINATE NEXT STEPS, DEBRIEF, AND SHARE INFORMATION.

AIM

To document the process of co-creation to allow for future use of a workable framework. To task and complete published papers on scoping review, pilot implementation of curriculum in Uganda, and co-design framework. To set up for further implementation with evaluation of face validity and effectiveness.

QUESTIONS

- How can we measure effectiveness?
- What impact will these outputs have?
- How can this participatory co-design framework incentivize local engagement and cultural relevance of interventions?
- Where will publishing be most impactful?
- What will ensure the greatest engagement with the designed curriculum?

OUTPUT(S)

- Workable framework on participatory co-design
- Documentation and engagement

Implementation

CREATE AN ITINERARY FOR A SERIES OF IN-PERSON WORKSHOPS ENGAGING ALL PARTICIPANTS IN IMPLEMENTATION OF THE PROTOTYPE CURRICULUM.

AIM

To design a multi-day in-person workshop for all participants to provide feedback on the implementation process of the co-created training curriculum.

QUESTIONS

- How do we ensure greatest attendance and engagement?
- What group size is most effective for receiving feedback on curriculum from potential instructors and trainees?
- How can we add a video component to the curriculum featuring potential instructors/trainees?

OUTPUT(S)

- Agenda for in-person workshop with discussion questions, participant invite list, research team assignments
- Concrete prototype curriculum ready for final in-person feedback

CONDUCT AN IN-PERSON WORKSHOP WITH A SMALLER GROUP OF STAKEHOLDERS/SMES FOR LAST REVIEW BEFORE IMPLEMENTATION

AIM

To present and have final feedback on the curriculum (sent to invitees a few days prior of this workshop for asynchronous viewing) before pilot implementation with community members.

QUESTIONS

- Do participants see any gaps in content, risks, or any other factors?
- How do participants see the training flowing in terms of participatory activities, discussion, learning activities, assessment?
- What do participants want to come out of these implementation workshops?

OUTPUT(S)

Co-created curriculum accurately reflecting to the best of its ability the community needs

Appendix A. COOL-BURNS Champion Cards

Reference Appendix A. for removable COOL-BURN Champion Cards to award participants after completion of the COOL-BURNS training.

Notes

References

- Agency for Clinical Innovation. Burn injury education. New South Wales Government. Accessed June 2, 2024. *https://aci.health.nsw.gov.au/networks/burn-injury/resources/ education*
- Basic emergency care: approach to the acutely ill and injured. Geneva: World Health
- Organization and the International Committee of the Red Cross; 2018.
- Burns. The Paediatric Trauma Manual. The Royal Children's Hospital Melbourne. Accessed June 1, 2024. *https://www.rch.org.au/trauma-service/manual/Burns/#:~:text=Children%20have%20thinner%20skin%20than,child%20compared%20 to%20an%20adult.*
- Burns in children. Johns Hopkins Medicine. Accessed June 2, 2024. *https://www.hopkinsmedicine.org/health/conditions-and-diseases/burns/burns-in-children#:~:text=Greatest%20number%20of%20pediatric%20burn,age%20burned%20by%20scalding%20liquids.&text=Male%20children%20are%20at%20increased,play%20and%20risk%2Dtaking%20behaviors.&text=Female%20children%20are%20at%20increased,in%20the%20kitchen%20or%20bathroom.*
- Burns, scalds, and fire-related injuries. UNICEF. Accessed May 29, 2024. *https://www.unicef.org/parenting/safety/burns-scalds-fire-safety-tips*
- Guidelines for Burn Patient Referral. American Burn Association; 2022. Accessed June 1, 2024. *https://ameriburn.org/resources/burnreferral/*
- Krishnamoorthy, V., Ramaiah, R., & Bhananker, S. M. Pediatric burn injuries. International journalofcriticalillnessandinjuryscience. 2012; 2(3), 128–134. doi: 10.4103/2229- 5151.100889
- Pre-Hospital Care (First Aid Clinical Practice Guidelines). British Burn Association. Accessed June 2, 2024. *https://www.britishburnassociation.org/first-aid-guidelines/*
- TEACH VIP-2: User's Manual. Geneva: World Health Organization; 2012.
- WHO competency framework for health workers' education and training on
- antimicrobial resistance. Geneva: World Health Organization; 2018.
- WHO Emergency care system framework. Geneva: World Health Organization; 2018.

For more information, Please contact

Dr. Charles Ssemugabo

Makerere University School of Public Health

New Mulago Hill Road / New Mulago Hospital Complex
Makerere University School of Public Health Building, Room 325, P.O.Box 7072 Kampala, Uganda

MAKERERE UNIVERSITY

IMPERIAL

The George Institute for Global Health