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# **First aid management of paediatric burn and scald injuries in Southern Malawi: A mixed methods study**

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## Abstract

### Background

In sub-Saharan Africa, burn and scald injuries occur more commonly in children aged less than five years, than in any other age group, and carry a high lifetime morbidity. The optimal first aid at the time of injury includes the use of cool running water, which can reduce pain, scarring, and the requirement for skin grafting. Data on the types of first aid used in Malawi is lacking, as is an in-depth understanding of the underlying factors which may influence this health behaviour. This study sought to: (a) document the types of first aid after paediatric burn and scald injuries in Southern Malawi; and (b) explore factors affecting the choice of first aid used.

### Methods and Findings

We conducted a sequential explanatory mixed methods study. Quantitative analysis of a prospectively collected database of all patients aged less than 17 years admitted to the only burn unit in Southern Malawi was followed by thematic analysis of semi-structured interviews with 15 adults who had witnessed a paediatric burn or scald injury. 1326 patients aged less than 17 years were admitted to the Queen Elizabeth Central Hospital between July 2009 and December 2016. Median age was 3.0 years (IQR 1.9-5.0) and male to female ratio 1:0.9. The commonest cause of injury was hot liquid (45%), followed by open fire (31%) and porridge (12%). First aid was applied in 829 patients (69%), the commonest applications used were water (31%) and egg (21%). There was a statistically significant association between the type of first aid and secondary education of the father ( $p=0.009$ ) or mother ( $p=0.036$ ); however, the type of first aid used was more likely to be egg rather than water. Analysis of qualitative interviews identified four main themes: *perceived roles and responsibilities within the community, drivers of individual behaviours, availability, and trust*. Participants reported using eggs as a first aid treatment, as these were readily available and were seen to reduce the occurrence of blisters and prevent peeling of the skin. By comparison, there was a strong underlying fear of using water on burn injuries due to its association with peeling of the skin. Intergenerational learning appeared to play a strong role in influencing what is used at the time of injury, and mothers were the key source of this information.

## **Conclusions**

This study provides the largest description of first aid use in sub-Saharan Africa, strengthening the evidence that remedies aside from water are commonly used and that higher parental education levels do not translate to increased use of water, but rather use of alternative treatments. Our qualitative findings allow improved understanding of how first aid for paediatric burns is perceived in rural Malawi communities, providing insight as to why certain first aid choices are made and the possible barriers and facilitators to the adoption of water as a first aid treatment.

## **Introduction**

### **Background and Context**

Burn injuries were firmly placed in the global public health arena in 2008 when cited as a 'major public health problem' in the World Health Organisation's (WHO's) Plan for Burn Prevention and Care (1). Recent WHO estimates for burn injuries (2) articulate the scale of the problem and highlight a glaringly disparate spread between socio-economic groups and ages (1, 3). Around three quarters of burn deaths occur in low-middle income countries, and at 4.5 per 100,000 population, the death rate in Africa is more than double that of Europe (1.7 per 100,000 population) (2). It has been estimated that between 300,257–17,479,262 new burn injuries occur annually in children aged less than five years of age in sub-Saharan Africa (4), an approximation with such a wide range that it also serves to highlight the lack of available data on paediatric burn injuries in this area of the world. Children aged less than 10 years made up nearly 85% of the burn population in a systematic review from sub-Saharan Africa (5), and in a separate study, when total hospital inpatient days were calculated, children treated for burn injuries were second only to those being treated for malnutrition (6).

Malawi is a landlocked country in South East Africa with two burn units serving an estimated population of around 18 million (7, 8). A recent review of over 7000 paediatric patients admitted to a central region hospital, noted that just under one third of admissions were due to trauma, with burns cited as the second commonest cause of paediatric injuries (9). In addition, a second study from the same hospital, noted that only around one quarter of all burn injured patients attending hospital were actually admitted (10), suggesting that the true burden of paediatric burn and scald injuries in Malawi may not be fully recognised.

### **First aid treatment of burn injuries**

Fire, hot liquids, chemicals and electricity are known to cause destruction to the protective epithelial layers of the skin (11), resulting in subsequent burn and scald injuries and complications, such as pain, infection and scarring (12). Cool water first aid has been shown not only to reduce pain (13), but also to improve the outcome, with respect to quicker healing (14, 15), decreased scarring (16) and reduced requirement for skin grafting (17, 18).

In order for first aid to be used, the public require to have sufficient understanding of the appropriate first aid methods and the necessary resources (19). In high-income countries, the majority of people have access to safely managed water (20), but in Malawi, only 2.7% of houses have piped water to the inside of their house (21). Burn and scald injuries are more common in low socio-economic settings (22), which has led some to postulate that in low-income countries, this translates to those who are injured as also being the least likely to have easy access to running water (18, 23). In this common scenario, it is unknown whether water has a perceived higher value, and whether as well as the physical barrier of having no tapped water, there is an added reluctance to 'waste' water by pouring it over a wound. Alternative first practices are commonly seen in Africa (18, 22-31), where traditional medicine plays an important role(32, 33). Increasingly, scientists are exploring the possible beneficial healing properties of some of the more common applications (21, 34, 35), but clear information is not yet available on most. However, it is accepted that there are certain specific treatments, namely soil and cow's dung, which absolutely should not be used due to the increased risk of serious infections such as tetanus (12, 23, 36).

### **Study Objectives**

Designing public health programmes for burn injury first aid in Malawi requires a good understanding of existing health behaviours, as well as consideration of the barriers and facilitators to the adoption of first aid messages, however there is insufficient knowledge on first aid practice for burns in sub-Saharan Africa, and in Malawi especially. The aim of this study was to identify the first aid practices in paediatric burn and scald injuries in Southern Malawi and to explore the underlying patient and injury scenario factors which could help to identify the facilitators and barriers to the use of water in first aid management.

## **Methods**

This was a sequential explanatory mixed methods study. Ethical approval was granted by the College of Medical, Veterinary & Life Sciences Ethics Committee of the University of Glasgow (Project No: 200170097) and by the College of Medicine Research and Ethics Committee of the University of Malawi (COMREC No: P.05/18/2391).

### **Quantitative Part**

Between July 2009 and December 2016, all patients aged less than 17 years admitted with a burn or scald injury to the burn unit at the Queen Elizabeth Central Hospital, Malawi, had a proforma prospectively completed by a dedicated nurse who interviewed the parent or guardian. Demographic details, cause of burn, details of injury and first aid applied were recorded (Appendix 1). Patients who died within 12 hours of admission to the unit were not interviewed, but age, gender and residence were recorded. Data analysis took place in two stages using R Studio:

*Tests of association and descriptive statistics:* to explore whether there were any patient or injury scenario factors which may be associated with different types of first aid used, cross-tabulation and Pearson's chi-square tests were performed for categorical variables.

*Univariate and multivariate logistic regression:* to provide additional statistical robustness and explore whether there were any patient or injury scenario factors which may influence the likelihood of: a) water being used as a first aid method (compared to all other types of first aid and 'no' first aid combined) or b) any type of first aid being used (compared to 'no' first aid).

### **Qualitative Part**

To explain and elaborate on the quantitative findings, 15 face-to-face, qualitative interviews were conducted in May 2018 with adults who had witnessed a paediatric burn or scald injury (Table 1). Participants were recruited from a rural village (approximately 400 population) 21 km from the hospital, deemed to be far enough that it would be unrealistic to walk (but still within the catchment area of the hospital) and mainly consisting of subsistence farmers, with varying levels of financial means to attend hospital. Interviews took place in a meeting room at the house of the village Chief and lasted, on average, half

an hour. An interpreter was used in twelve of the interviews, which were conducted in Chichewa, the local language. A semi-structured interview guide was used to elicit detailed information on participants' beliefs, knowledge, and practices of first aid after paediatric burn or scald injuries. Interviews were audio recorded, transcribed verbatim (in English), and analysed using an inductive thematic approach (24). The role of the interviewer (EB) was considered throughout the study (25, 26) and reflexivity was practiced through the use of a diary, where the researcher recorded her observations, feelings and reflections about the process and experience.

### **Nanzikambe Arts and the ReBaS (Reduction of Burns and Scalds in Children) project**

A dedicated burn prevention programme (the ReBaS project(87), has been running in Southern Malawi since January 2010. Within this project, a community paediatric burn education programme was delivered in the local language (between March 2010 and January 2017) by Nanzikambe Arts(88) incorporating first aid advice to clean the wound with water, cover with a cloth, and seek advice from hospital.

## **Quantitative Results**

1326 patients aged less than 17 years were admitted between 1<sup>st</sup> July 2009 and 31<sup>st</sup> December 2016, with complete first aid data available in 1197 cases. 826 patients (69%) received first aid at the time of injury, 371 received none (31%). The commonest first aid methods were application of water in 374 patients (31.2%) and egg in 256 patients (21.4%).

### **Patient factors**

Over three quarters of injuries (76.4%) occurred in children aged less than 6 years (median age = 3 years, IQR = 1.9 – 5 years), differences in ages across type of first aid used were not statistically significant ( $H = 17.228$ ,  $df = 10$ ,  $p = 0.069$ ). 693 patients were male (M:F = 1:0.9). The majority of injuries were less than 20% TBSA (Figure 1) and the commonest areas affected were the limbs (86%), body (65%), and head (28%). Area of body affected was not associated with type of first aid used, and although the median %TBSA was higher in patients where no first aid or flour/salt/sugar was used, these findings were not statistically significant ( $H = 18.144$ ,  $d.f. = 10$ ,  $p = 0.052$ ).

### **Socio-economic factors**

Secondary education in the father was associated with increased use of egg or other forms of first aid, and decreased use of no first aid ( $\chi^2 = 11.440$ ,  $d.f. = 3$ ,  $p = 0.009$ ), whilst in the mother, it was associated with more use of egg and less use of no first aid ( $\chi^2 = 8.568$ ,  $d.f. = 3$ ,  $p = 0.036$ ) (Table 2). 73 people (6%) had tapped water to their house, but the majority did not ( $n = 1136$ , 94%). Having tapped water to the house was strongly associated with the father or mother having secondary education ( $p < 0.001$ ).

### **Nanzikambe Arts performance areas**

There was a statistically significant association ( $\chi^2 = 15.487$ ,  $d.f. = 3$ ,  $p=0.001$ ) between the areas where burn first aid education was delivered, and the type of first aid used (Table 2). In univariate logistic regression, there was a statistically significant ( $p<0.001$ ) increase in the odds of using first aid if a patient came from an area where first aid education had been carried out compared to areas where it had not (OR 1.47, 95%CI 1.06-2.03).

### **Cause of injury**

The main causes of injury were hot liquid (45.2%), open fire (30.7%) and porridge (12.3%) (Figure 3). There was a statistically significant association between the cause of injury and type of first aid used ( $\chi^2 = 30.483$ , d.f. = 18,  $p = 0.033$ ). In open fire injuries, it was more common to do no first aid, and less water was also used. There was a statistically significant ( $p = 0.008$ ) increase in the odds of using first aid if the injury was caused by porridge as opposed to hot liquid (OR 1.090, 95%CI 1.21-2.61), a significance which persisted in the multivariate model ( $p = 0.011$ , OR 1.133, 95%CI 1.29-1.247) when all other variables were held constant (Table 2).

### **Location of accident**

The majority of injuries occurred outside the house (58.5%). The commonest indoor locations were the kitchen (20%) and living room (15%). A statistically significant association was seen between the location where the accident occurred and the type of first aid used ( $\chi^2 = 38.640$ , d.f. = 12,  $p < 0.001$ ). Water was used more often in the living room or 'other' indoor locations, and less in injuries occurring outside. Injuries occurring outside the house or at locations such as the garden, bush or market more often did not receive any first aid.

### **Season of injury**

Around half of injuries occurred in the rainy season (December - April). Season was significantly associated with the type of first aid used ( $\chi^2 = 12.774$ , d.f. = 6,  $p = 0.047$ ). In the dry seasons there appears to be more water used for first aid, whereas in the rainy season eggs are more common (Table 2). In the multivariate logistic regression model holding all other variables constant, there continued to be a statistically significant increase in the odds of using water for first aid in the cool dry ( $p = 0.006$ , OR 1.104, 95%CI 1.03-1.185) and hot dry seasons ( $p = 0.017$ , OR 1.105, 95%CI 1.018-1.12), compared to the rainy season (Table 2).

## Qualitative Findings

Four main themes were identified from the analysis of the qualitative data: *perceived roles and responsibilities within the community, drivers of individual behaviours, availability, and trust* (Figure 4). These are explained in detail below.

### Perceived roles and responsibilities within the community

#### *Expectations and blame*

There was an implicit assumption that mothers are mainly responsible for the health and safety of the children, with the men's role being outside of the house and men often absent from the home. With this underlying principle, if something then went wrong and the child had an accident, the mother appeared to shoulder the blame for this. This was in comparison to the father, where an absence of responsibility for safety in the home also meant an absence of blame on them if the child had an accident.

*Some mothers don't even care whether their children get injured or not, maybe it's to do with the awareness. They are not aware that the, er, the accident may occur...er, someone, another mother, they say 'let me put off this fire before I leave' but, but then another will not er, think to do the same. It depends on the mothers' instincts. Female, older*

#### *Intergenerational learning*

Learning was passed down through generations, usually via observation and from mother to daughter. One of the primary drivers for treating paediatric burn wounds was for the mother to use what she had previously witnessed her own mother doing.

*...it's something passed, which is being passed on, yeah, it's something which...we see our mothers doing it...so when we have children, and this thing happened, we do the same, so it's something which is being passed on, yeah. Female, older*

## Trust

### *Information context*

For a participant to trust the source of knowledge, the source itself had to have an underpinning context to either burn injuries or to children, depending on what advice was being provided and who or what the source was. Mothers had a strong position with regard to the responsibility of the child, and therefore provided a suitable context to be trusted for advice regarding an injured child. School was not often trusted as a source of first aid education, possibly because the elderly participants had not been to school themselves and had no perception of its value, and secondly, since children may be taught something different to what they are seeing in the community, it may seem out of context for them. Finally, the school didn't treat burns, or have people there who were recognised in the context of 'healing'.

*[In relation to children learning in school, about using water on burn injuries, would the parents believe them?] ...not from the school, maybe from the clinic, from the school no. [From the school no, but from the clinic yes?] ...the doctor who deals with the burned cases, yes, who knows more about the burned cases. Female, older*

#### *Previous experiences*

Negative experiences tended to have a much stronger influence on trust and future behaviour than positive experiences. People who had a poor hospital experience would be unlikely to trust the advice or treatment given there or go back to hospital in future.

*She feels she was not properly assisted, hmm...they put plaster. So, when she came home, she thought that was not proper for the wound, that's why she took it off. Female, younger*

#### **Drivers of individual behaviours**

##### *Understanding of the wound*

Practical aspects about the wound were often cited as the reason a particular remedy was used, with size of wound being a major factor determining behaviour. Larger burns prompted the immediate action of going to hospital, whereas smaller burns could be treated with local medicines. Size of wound was also related to the cause of injury and area of body affected, with fire burns often described as 'big burns on the body', and porridge

burns as 'small burns to the arm'. Porridge burns appeared to be the only injury for which it was acceptable to use water as first aid.

*They are very difference. If it is a small burn or sometimes it is a big burn, the management is different. That's why she used an egg, because the scald was smaller. But if someone catches fire and there is a big burn, they would prefer to go to hospital immediately... She thinks the bigger burns they will not be able to manage at home. Female, younger*

### *Beliefs and fears*

Traditional beliefs, or local knowledge, had a strong influence on how participants behaved at the time of injury. They were passed down through generations, thus strongly linked to the *intergenerational learning* subtheme and - if they trusted the source of this belief or not - to *information context* and *previous experience*. The two main fears were fear of the skin peeling off and future scars. Beliefs provided the solutions to these fears (such as using treatments to prevent peeling), or caused and further fed the underlying fear (such as the belief of water being bad for wounds). Finally, how deeply these beliefs and fears were embedded, seemed to influence how the participant acted at the time of injury. This was notable in relation to those participants who said they felt that water could help, but at the time of injury reported to use eggs instead, as these were more common to use. This suggested that although they had learnt about using cool water for burn injuries, in the moment the accident happens, because it is not a deeply held belief, they do not remember about it.

*This time around, she was in a panic. So, the first thing she saw was the egg, so this is why she used first the egg, she didn't think about the water.*

*Female, older*

### *Availability*

With all previous factors considered, the final common pathway was availability. Participants described situations where the treatment they wanted to use was not available, so they had to use something else. The one major exception to this availability theme was with regard to water, when the beliefs and fears associated with using water on a wound meant that despite it being readily available, it would not be used.

*Yeah, but now days we don't use paraffin, most the egg, because we have  
chicken, so that's why we use eggs. Female, younger*

## **Discussion**

This is the first study to document the first aid practice of paediatric burn and scald injuries in Malawi, identifying type of first aid use by 1197 patients over the course of 7.5 years. Approximately two thirds of patients had first aid applied at the time of injury, and of these, the commonest treatments were the use of water (31.2%) and egg (21.4%). After this, there was a wide variety of different treatments used, some of which are considered harmful, such as soil and sand (1.8%). The definition of traditional medicine is wide (27) and could include herbs and other remedies seen in this study. Therefore, although this study only quoted 2.6% use, if alternative treatments are grouped together, the use would have been 37.8%, in line with other studies. (28, 29)

The qualitative data confirmed the use of eggs as a first aid treatment and shed light on the reasons why this occurred: eggs were commonly noted to be available, mothers often recommended the use of egg, and there was a strong belief that their use would reduce the occurrence of blisters and prevent peeling of the skin. Explaining the quantitative findings of the use of water in one third of hospital inpatients appeared to be more complex, and will be explored throughout the following sections.

### **Education levels and socio-economic position**

This study found a statistically significant ( $p < 0.001$ ) increase in the odds of using first aid if either parent had secondary education. Outside of Africa, parental education levels have been shown to increase first aid knowledge, however, a study from Ghana (30) showed that increased education levels may in fact increase 'inappropriate' first aid, but it was not statistically significant. In this study, there was a statistically significant association between the father ( $p = 0.010$ ) or mother ( $p = 0.036$ ) having secondary education and the use of egg, and in the case of the father, 'other' first aid too. These remedies are considered 'inappropriate' if water is used as the gold standard first aid definition, and is the first time this statistical significance has been documented in Sub-Saharan Africa.

In order to try and understand this, the key may be in recognising the important connection between education level of the parents and family socio-economic position. Education has

been shown to increase social standing and income(31), its two main strengths as a measurement being that it is easy to measure and less contentious than asking directly about income. It has been recognised as a particularly good marker for socio-economic position in low middle-income countries (32), as often there is a fee for school attendance. In Malawi, although primary school is free, secondary schools are fee paying.

The secondary school enrolment ratio in Malawi is estimated to be around 25% (33), but in this study, in those patients admitted to hospital, the parental secondary school levels were much lower, supporting the theory that burn injuries occur more commonly in lower socio-economic groups (3). In this study, there was also a statistically significant ( $p < 0.0001$ ) association between secondary education of the father or mother and having tapped water to the house, thus further supporting the concept that parental education levels in Malawi are a good marker for socio-economic position.

If we accept this assumption, then it would translate into those with a higher socio-economic position being more likely to use egg or other remedies as a first aid treatment after paediatric burn injuries. In leaning on the qualitative phase of the study, the *availability, beliefs and fears, and understanding of the wound* are considered. It is possible that having the money to buy eggs or other remedies could be a key factor influencing their use, and along with the beliefs around their benefits to the wound, the relationship to education levels seems plausible: it is possible that having even a *bit* of extra money means you have the means to put *something* on a wound. What requires further explanation, however, is why an increase in education levels does not translate into the current recommended guidance of using water for first aid.

### **Injury scenario factors and wound management beliefs**

In Malawi, injuries are related to the practice of using ground level fires for cooking and open fires for space heating, indicating that burn and scald injuries are related to cultural factors (34, 35). Hot liquid was the commonest cause of injury (45.2%), which is consistent with other studies from Africa. There was a statistically significant association between the type of first aid used and the cause of injury ( $p = 0.033$ ). In burns caused by porridge, water was used more often for first aid than would be expected (40.4%), compared to other

causes of injury. For injuries caused by open fire, water is used in only one quarter of patients, and no first aid is applied in 38.4% of cases (Table 2).

The qualitative data subthemes *understanding of the wound* and *beliefs and fears* help to partly explain these associations. *Cause* of burn was often interpreted as *size* of burn, and smaller wounds were more often treated with egg or – especially in the case of small porridge burns to the arm – then water. This could explain why porridge burns (which were usually described as smaller burns to the arm) more often had first aid applied. Larger wounds however, were often described as fire burns to the body, and the underlying fear of big wounds translated into a priority of getting to the hospital quickly rather than applying first aid. This directly supports the earlier postulation that for bigger and deeper wounds, underlying panic means that the priority becomes seeking help rather than applying first aid (14, 36).

### **Season of injury**

There was a statistically significant ( $p=0.0468$ ) association between the season of injury and the type of first aid used, where it was noted that in the cool dry and hot dry seasons there was more water used as a first aid measure than expected (Table 2). This finding challenges the theory that water may not be used in first aid due to lack of availability, since, compared to the rainy season, there is likely to be less water available. *Availability* was thought to be the predominant determinant of which first aid is used. It was noted that water was usually readily available for use in an emergency, however, the deeply held *beliefs and fears* about water causing the skin to peel off appear to override the use of water in many instances. In the subtheme *understanding the wound*, one of the main priorities is to prevent a blister from getting bigger, and since water is not seen to do this, the ‘lack of availability of water’ theory is further challenged. The findings in this study would suggest the reason that water is not more commonly used as a first aid treatment is not related to its lack of availability, but rather more complex factors related to beliefs, fears and the understanding of its role in the first aid management of the wound.

### **Consideration of the barriers and facilitators**

The previous sections have identified four key messages with which to base the exploration of possible barriers and facilitators to 'gold standard' first aid management in Southern Malawi. Firstly, water availability appears not to be a barrier to its use, and appears in fact, a facilitator: water is available, even in the dry seasons. Evidence is also available in the literature to support its use as a 'gold standard' first aid treatment. Higher education levels are linked to more first aid use – a potential facilitator – and yet an increase in the use of water is not seen. Possible barriers could be either a lack of appropriate public health messages, or a greater influence from the deeply embedded cultural beliefs and behaviours. In areas where first aid education was delivered by Nanzikambe Arts there was an increased odds of using first aid at the time of injury, not an increase in the likelihood of using water. This leans towards the theory that whilst education brings either a confidence or the financial means to actually use first aid, in spite of hearing that water is the most appropriate first aid to use, people are unwilling to disregard the advice from intergenerational learning and local beliefs. A major barrier to permit challenging the practice of using egg is the absence of solid literature proving it is harmful.

As a final point, the importance of recognising the immense demands which are placed on parents in low income countries by the necessary prioritisation of food, shelter and warmth over childhood safety measures, has been previously highlighted (ref) and must be considered during the design and delivery of public health messages. Whilst acknowledging the major role that mothers take in intergenerational learning, the temptation may be to view this as a facilitator for cost effectiveness by focussing first aid education efforts mainly on the mothers; an unintended consequence may be the reinforcement of the belief that mothers are solely responsible for burn injuries occurring in children, and the subsequent blame this entails.

## **Conclusions and recommendations**

This mixed methods study has enriched the evidence base for paediatric burn first aid in sub-Saharan Africa, confirming certain aspects that appear to be specific to the area. Based on our findings, the following recommendations can be made for public health initiatives and future research:

- Water is available for first aid use, but underlying fears and beliefs need to be addressed through public health messages. Further qualitative research with those who currently use water (when and why) for first aid may identify additional facilitators;
- Scientific research exploring the effect of egg on burn wounds is needed to properly categorise this method as either appropriate or inappropriate first aid;
- Public health education should address underlying fears associated with burn wounds and provide clear explanation on the purpose for using appropriate first aid;
- Design and delivery of these messages should be particularly cognisant of the complexities, challenges and sensitivities around conflicting local health knowledge, and the potential unintended consequences of reinforcing blame through targeted education programmes.

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## Appendix 1: Proforma

Proforma used for data collection of all patients aged less than 17 years admitted to the Burn Unit at the Queen Elizabeth Central Hospital, Malawi.

<u>PAEDIATRIC BURN AND SCALD AUDIT</u>		
MONTH OF ADMISSION: _____		
NAME: _____	AGE: YRS/MTHS _____	GENDER: M/F _____
PLACE OF RESIDENCE: _____		WEIGHT: ____KG _____
MORBIDITY: EPILEPSY/CEREBRAL PALSY/OTHER: _____		(SPECIFY)
NUMBER OF PEOPLE IN HOUSE: ADULTS ____ CHILDREN ____ (UNDER 5YRS) ____		
SECONDARY EDUCATION: FATHER: Y/N MOTHER: Y/N OTHER: _____		
ELECTRICITY: LIGHTS: Y/N STOVE: Y/N		
TYPE OF COOKING STOVE: _____		
TAPPED WATER TO HOUSE: Y/N WATER HEATER IN HOUSE: Y/N		
CAUSE OF BURN OR SCALD: HOT WATER/OPEN FIRE/PARAFFIN/ASH/ELECTRICITY		
LOCATION OF ACCIDENT: BEDROOM/LIVING ROOM/KITCHEN/OUTSIDE/OTHER: _____		
HISTORY:		
WAS AN ADULT PRESENT WHEN INJURY OCCURRED: Y/N		
IF NO, WHAT WAS THE ADULT DOING: _____		
FIRST AID GIVEN AT TIME OF INJURY: _____		
TIME FROM INJURY TO PRESENTATION AT HEALTH CENTRE: _____		
AREA OF BODY AFFECTED: HEAD/CHEST/ABDOMEN/BACK/LEG R L/ARM R L		
%TBSA: _____		
MANAGEMENT: CONSERVATIVE/OPERATION _____		
LENGTH OF HOSPITAL STAY: _____		
OUTCOME: DISCHARGE HOME/DEATH _____		
CAUSE OF DEATH: SEPSIS/HYPOVOLAEMIC SHOCK/CHEST INFECTION _____		