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## **NSW Statewide Burn Injury Service (NSW SBIS)**

The NSW Statewide Burn Injury Service is part of the NSW Agency for Clinical Innovation (previously Greater Metropolitan Clinical Taskforce). It was formed in 2003 in order to centralise the management of severe burns in NSW and bring together a multidisciplinary group of staff expert in the management of burns. The NSW SBIS consists of two adult units at Royal North Shore Hospital and at Concord Repatriation General Hospital and a paediatric unit at the Children's Hospital at Westmead. Staff of the NSW SBIS treated approximately 2300 patients with burns during the twelve months in 2009.

The NSW SBIS has a Burns Prevention Committee which consists of a multidisciplinary group of burns clinical staff and staff from other relevant agencies e.g. NSW Fire Brigades, Kids Health, who meet regularly to address and promote issues relating to burns prevention. The following report has been compiled by the members of the committee.

### **Legislation – NSW and Australian Standards and Codes of practice**

#### **Hot Water**

The regulatory framework around the heated water system regulation is defined as the '*NSW Code of Practice: Plumbing and Drainage*' which stipulates that heated water installations deliver water to outlets used primarily for personal hygiene purposes at a temperature not exceeding 50°C in new residential buildings and at no more than 43.5°C in all early childhood centres, primary and secondary schools and nursing homes or similar facilities for aged, sick or disabled persons. This amendment to the Code of Practice was introduced in NSW in July 1999. The Code of Practice also covers replacement of heated water systems where there have been renovations or substantial changes to the heated water system in houses that pre-date 1999.

A recent paper (Harvey et al, nd) reviewing the impact of the introduction of the regulations in NSW has found that there has been an average 6% decrease per year in hospitalisations for hot tap water burns since the introduction of the regulations. Despite this decrease, there have been 845 hospitalisations for hot tap water scalds since the regulations indicating that hot tap water scalds continue to cause significant morbidity and mortality in NSW. The NSW Department of Water and Energy and the Better Regulation Office, NSW Department of Premier and Cabinet has undertaken a comprehensive review of the plumbing regulations outlined in the 'Reforming arrangements for regulating Plumbing and Drainage in NSW: review report' 2009. This report did not however address the issue of the scope of the regulations.

A small child was recently admitted to a NSW Burn Unit suffering burns to 70% of their body which were sustained from falling into a hot bath. This child may not survive this entirely preventable injury. The finding of a continuing significant

number of hospitalisations suggests that the regulations have not achieved universal coverage (Harvey et al, nd). In 2009 fifteen of the 76 patients treated for hot water system burns in NSW Burn Units were aged over 65 years old. These burns are often sustained on the feet and buttock area causing long term management issues. The risk of death rises rapidly as age increases and serious associated diseases get more common. Amputations of lower limbs and permanent colostomy (diversion of the bowel on to the abdominal wall) can be required to keep these patients alive.

Widening the scope of the regulations to include all dwellings would have the potential to significantly reduce the incidence of hot water scalds and in consequence the cost of hospitalisations for this reason to the NSW Department of Health.

### **Flammable clothing**

Australian Standard AS/NZS 1249:1999/2003/2007 relates the introduction of an Australian safety standard for children's clothing in 1978. "The main purpose of the mandatory standard is to reduce the risk of serious injury and death to children as a result of accidents involving children's nightwear and fire through:

- excluding from the Australian market children's nightwear that presents an unacceptable level of fire risk
- ensuring appropriate marking and labelling of the fire hazard of children's nightwear to allow consumers to make informed choices, and
- ensuring paper patterns for children's nightwear and limited daywear carry warning about the flammability of certain fabrics to allow consumers to make informed choices.

To achieve this the mandatory standard set minimum requirements on design, manufacture, labelling and testing of children's nightwear and labelling of paper patterns, in line with principles established by the Council of Australian Governments (COAG) which establishes a framework to ensure that proposals undergo appropriate assessment to establish that benefits outweigh costs. The proposed mandatory standard will meet the minimum fire safety needs of the community.

During 2009 forty-nine patients required treatment at one of the NSW SBIS Burn Units with burns related to flammable clothing. We believe that there is a significant hazard to children from wearing flammable clothing during the day or evening and propose that the Australian standard SLI 2007.No 21 based on AS/NZS 1249 1999 be reviewed with a view to including children's day wear. There is currently no Australian standard relating to adults day clothing. We propose that the incidence of adult burns from flammable clothing be reviewed with a view to introducing an Australian standard.

## **Cigarette Lighters**

Cigarette lighters continue to cause burns young children. Incidents occur when children access lighters in the home. Since the beginning of 2006 fifty children have been treated at a NSW Burn Unit for burns involving cigarette lighters. These children were aged between 1 and 17 years old.

Currently the Australian Standard for disposable cigarette lighters set out in the Fair Trading Regulation 2007 states that all disposable, novelty and certain refillable lighters sold must meet performance and labelling requirements. They must have a device, eg a button, release catch or metal guard which makes it difficult for small children to operate the lighter. Lighters must also be permanently marked;

WARNING - KEEP AWAY FROM CHILDREN or WARNING - KEEP OUT OF REACH OF CHILDREN

In addition the *Trade Practices Act 1974*, Consumer Protection Notice No. 25 of 2009 declares that toy-like novelty cigarette lighters are unsafe goods. An 18-month interim ban on the supply of toy-like novelty cigarette lighters in Australia came into effect on 30 December 2009. This ban was published in *Special Gazette* No. S223 of 30 December 2009.

Another issue with cigarette lighters is that they are readily available for anyone to purchase. Although cigarettes and smoking products have age limits on purchasing this does not extend to cigarette lighters or matches. Many accidents occur when children and young adolescents have ready access to lighters and matches.

The NSW Fire Brigades is currently reviewing this situation, supported by the Australasian Fire and Emergency Services Authorities Council (AFAC) Community Education Sub Group (CESG). It was agreed by the CESG members that this issue posed a significant life and property risk, and subsequently, the NSWFB were charged with the responsibility of 'lead' agency to drive change.

## **Treadmills**

Between January 2007 and December 2008, sixty-five children sustained treadmill-related burns. The mean age at the time of the injury was 3.7 years. 14 patients required surgery. In 2009 forty-one children sustained burns from this cause, aged between 1 and 13 years old with a mean age of 4 years old (Kim et al 2009, Wong et al 2007).

As a result the NSW Government has introduced a new Safety Standard to take effect from June 1 2009, requiring all new treadmills to carry a prominent warning sticker to alert treadmill users to keep children away from machines when they are in use.

The NSW Department of Fair Trading has also developed a safety awareness education campaign warning parents and carers of the dangers associated with home treadmills, which includes the distribution of posters *Treadmills and kids don't mix!* to all childcare centres, family day care, preschools, playgroups and community health and baby health centres across NSW.

We propose that the NSW Department of Fair Trading review the safety of treadmills with a view to the mandatory fitting of safety devices.

### **Hot Irons**

Hot iron burns are the most common cause of contact burns in children affecting predominately the palm of the hand. During the period 2005-2009 154 children were treated at the Children's Hospital at Westmead Burn Unit with hot iron burns of whom 29% required a skin graft. In a study from The Royal Children's Hospital in Brisbane 38% (Simons et al 2002) of burns were caused by a child pulling on the cord of the iron and 48% were caused by touching the hot surface of the iron.

Cordless irons are readily available in the market place as are stands on to which the hot iron can be placed. These irons are in the upper price range and therefore have low market penetration. We propose that consideration be given to a Federal Government subsidy and promotion campaign which would have the potential to substantially reduce the incidence and morbidity of hot iron burns in children.

### **Hot Water Bottles**

During colder months many people utilise hot water bottles. Contrary to manufactures' recommendations, many people fill these products with boiling water. This causes the material of which they are made to degrade, becoming more fragile and making it more likely that they will split. As the bottles are often in close proximity to the person a scald burn occurs when the hot water comes into contact with the skin.

110 patients in NSW Burn Units were treated with scalds from hot water bottles between 2006-2009, most of these injuries occurring when the bottle burst. In the same year two hundred and fifty thousand (250,000) hot water bottles were recalled due to defective manufacturing (NSW Government Department of Fair Trading 2/9/2009). These products require stringent testing to ensure that they are capable of sustaining extreme situations such as the application of boiling, or near boiling water over extended periods.

Members of the NSW Statewide Burn Injury Service are working with the Australian Competition & Consumer Commission to address this issue and review safety standards.

## Current Burn prevention campaigns NSW SBIS

### “Learn to Stop Burns” program

One thousand children with burn injuries present to The Burns Unit at the Children's Hospital at Westmead (CHW) each year. Despite major initiatives in prevention by burns professionals and NSW Health the number of children suffering burns continues to increase. Both the child and their family undergo a prolonged period of physical and emotional trauma during treatment and rehabilitation.

The unique characteristic of burn injuries is that they are mostly preventable. In order to raise awareness of burns prevention, the Burns Unit at CHW as part of the NSW SBIS in conjunction with Kids Health, have developed a burns prevention program 'Learn to Stop Burns!' The program which forms part of an inclusive “teachers resource” is aimed at primary school students and taught as part of the curriculum.

The program was formally launched at the Children's Hospital at Westmead by the NSW Minister of Health in August 2009.

The “Learn to Stop Burns!” program is a computer-based, animated “hazard house”, which allows users to journey through a house to see and learn how burns can happen and also how they can be prevented.

The teaching resource contains suggested teaching and learning activities, which assist students in exploring the house. The activities allow students to work towards achieving the stage two and stage three outcomes in the Safe living strand of the K-6 Syllabus Personal Development, Health and Physical Education (PDHPE). The current version of the interactive house can be viewed at:

[http://www.chw.edu.au/parents/kidshealth/burns\\_prevention](http://www.chw.edu.au/parents/kidshealth/burns_prevention)

An initial pilot study on the educational effect of the program on 89 primary school students in NSW (stage 2 and stage 3), found an 18% increase in the student's knowledge of burns prevention following use of the program. Teachers reported that it was “*a great unit*” and that the “*interactive nature of the program was excellent. Plenty of suggested support resources for teachers which provided background knowledge before teaching.*”

We believe that if teachers can manage to integrate the “Learn to Stop Burns!” interactive house with a series of classroom activities, and involve parents in the process, we can have a significant impact on the incidence of burns in children.

To date, all primary schools in NSW have received an offer to receive a copy of the CD, and 275 copies have been sent across the State. Requests for the CD are still being received.

## **“Burns Dangers III”**

### **A Burn Injury Educational Resource: Prevention and First Aid**

#### **A High School Based Strategy to Reduce Burn Injury**

The NSW SBIS is currently focused on reducing the risk of burn injuries from a variety of risk taking behaviours and every day hazards encountered by adolescents and young adults. Over 30% of severe burn injuries occur in adolescents and young adults.

We also know that approximately 75% of all burn injuries are caused by carelessness or risk taking behaviour and over 77% of all burn injuries occur in and around the home.

Targeting young adults and adolescents with education of these risks as well as educating on appropriate first aid, will affect their current and future behaviours for their adult lives as individuals and future parents.

“Appropriate first aid, particularly for scald injuries can make an 80% reduction in that burn wound ..... that translates whether you have surgery or not surgery, pressure garments and scar management and secondary revisional surgery. It's a 1 to 20 cost difference.....first aid will make that difference to the health budget” (Fiona Wood 2007 Science Show Radio National). NSW SBIS data shows that only 43% of all burn injuries presenting at the Burn units have adequate first aid.

“Burns Dangers III” is a DVD program which consists of scenarios that highlight some of the common different situations that teenagers and young adults may be burnt in. Students are given information to allow them to take the safer option to reduce the risk of sustaining burns. They are also provided with information regarding first aid to treat burns if they do occur. The DVD includes an interview with a burn survivor who relates the story of how a burn affected his life. A teacher resource was developed to complement the program, which includes both classroom based and home based activities, in line with the school curriculum. Home base activities encourage parents and carers to participate with their child to assess and remedy potential hazards in their home.

The number of burns being treated at specialist burns units within NSW is rising. The majority of burn injuries are preventable and appropriate first aid may decrease the severity of burn injuries. Providing education on the causes and first aid to receptive young people in an entertaining and informative way may have the effect of decreasing incidence and severity of burn injuries.

### **Recommendation**

We believe that in order to develop the full potential of these programs we need to employ a research assistant to promote the take up of the programs into schools in NSW. This researcher would also document the use of the programs

in schools and further evaluate the outcome. While we have established statistically significant increases in the knowledge of burns in students using the program in the pilot studies, we need to assess the frequency of its use in NSW schools and undertake further evaluation of the results. If we can validate the results of the programs in a wider cohort of students, we intend to lobby the Federal Government to roll out the programs in all schools across Australia.

## **Conclusion**

Burn injuries, no matter what the cause, can be devastating and have major life long complications. They affect the physical and emotional well-being of the patient, their family and friends. When occurring in young children they often leave scars that do not grow with the child and require frequent surgery for the child to develop normally. When occurring in the elderly they can become fatal especially when other pre-existing conditions affect their health.

Burn injury prevention is a major challenge. As burns are almost entirely preventable injuries, it is essential to address all aspects of prevention, from legislative changes to education programs, to reduce their occurrence.

We thank you in anticipation of considering this submission. Please feel free to contact me for further information or clarification, my details are below.

Kind regards,

Siobhan Connolly

Chair

NSW SBIS Burn Prevention committee

Burns Prevention & Education Officer  
NSW Statewide Burn Injury Service  
NSW Agency for Clinical Innovation

[www.health.nsw.gov.au/gmct/burninjury](http://www.health.nsw.gov.au/gmct/burninjury)

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