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Burns and scalds

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Key findings

- Approximately 46, 611 people were hospitalised as a result of burn or scald-related injury during the 5-year period 1999–00 to 2003–04.
- Injuries resulting from burn and scald injuries were especially high for young children aged 4 years and under, with 12,159 children hospitalised during the period 1999–00 to 2003–04.
- For infants aged 1 year or less, 84% of the burns and scalds injuries occurred between the ages 7–12 months.
- A distinctive age and gender profile can be seen for injuries resulting from exposure to *highly flammable liquid* (e.g. petrol), with males accounting for 88% of these hospitalisations, and a sharp increase in this type of injury at ages 10–14 through to 25–29 years, then declining at older ages.
- For males aged 15 through to 39 years old, more than 1 in 5 (22%) burn and scald injuries were sustained whilst *working for income*.
- Scald injuries are common in older people with the rates of hospitalised scalds, those involving hot tap water and other fluids, rising with age after around 70 years. This type of injury represents 24% of burn hospitalisations for those aged 70 to 74, and increases to 40% in those aged 85 and over.
- Burn injuries resulting from *intentional self harm* (ISH) are uncommon, yet serious when they do occur. 30% of the burns associated with ISH were full thickness burns. The length of time required in hospital as a result of these injuries is more than triple that of *scalds with hot water* and close to four times the hospitalisation period for burns resulting from *controlled fires*.
- Admitted burns and scalds are numerous. Fortunately, most are not very severe. Less than a quarter (24%) of the hospital admissions are for full thickness burns, with 96% of those affecting a body surface area of less than 10%. Most (69%) of burns and scalds result in a hospital stay of from 1 to 3 days, more than half (57%) involving a stay of 1 day or less.

Hospitalisations Australia 1999–2000 to 2003–2004

Indicator	Males	Females	Persons
Cases	29, 547	17, 063	46, 611
Adjusted rate (per 100,000)	61.0	34.7	47.9

Approximately 46,611 people were hospitalised as a result of burn or scald-related injury during the 5-year period 1999/00 to 2003/04. This equated to an age-adjusted rate of 47.9 cases per 100,000 population per year. Over 40% of these occurred in the home (43%). Scalds were the most common reason for hospitalisation for fire-related injuries, with approximately 15,716 people admitted to hospital during this period, and representing over a third of burn injuries (34%). Hot tap water accounted for 1 in 5 scald admissions while the majority fell under the category of hot fluids, including hot drinks, foods, fats and cooking oils (80%). Burns are a common occurrence yet account for only a small proportion of hospital admissions. For example, for the period 2001–02, burns and scalds were the cause of only 1.6% of injuries requiring hospitalisation, compared to other injury groups such as falls and transport accidents, which accounted for 34.8% and 14.6% of injury admissions, respectively.

Age and gender

During the period 1999–00 to 2003–04, the age-adjusted rate for burns and scald injuries for males was 61.0 per 100,000 and females was 34.7 per 100,000. Rates of hospitalised burns were higher for males than for females, overall and for most common types of case. The difference was generally greatest from teen-age to middle age and least in old age. Higher rates for males than females are evident from early childhood.

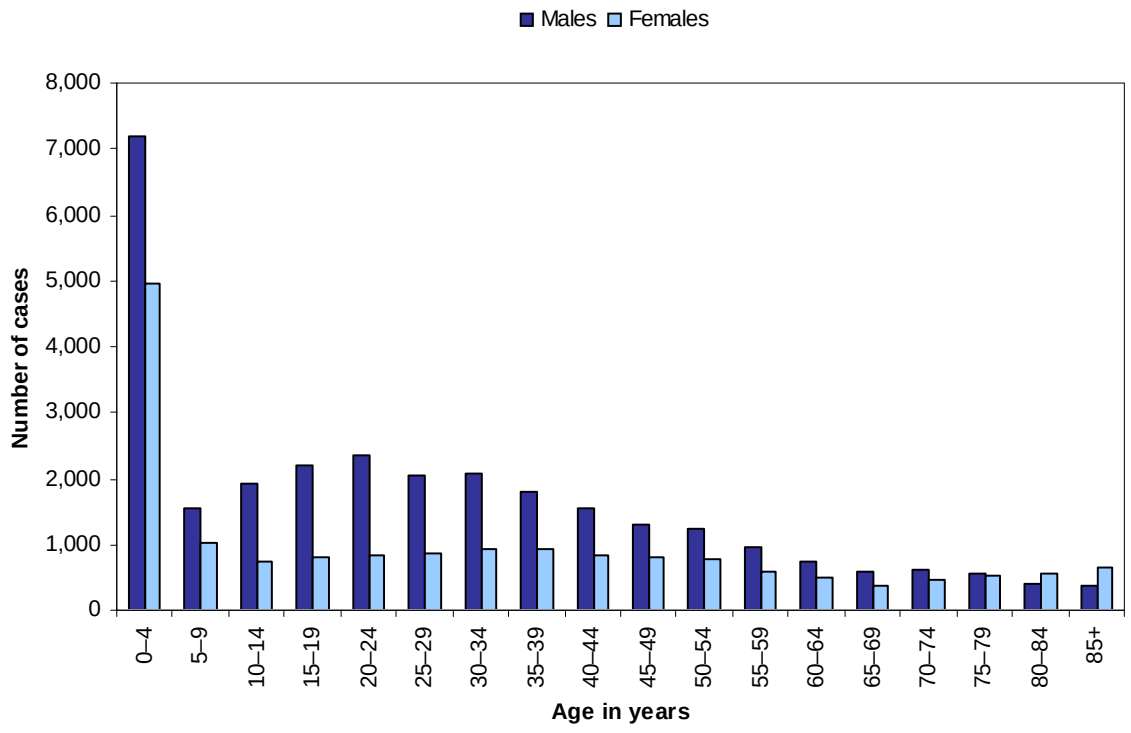

Figure 1: Burns and scalds hospitalisations by age and sex

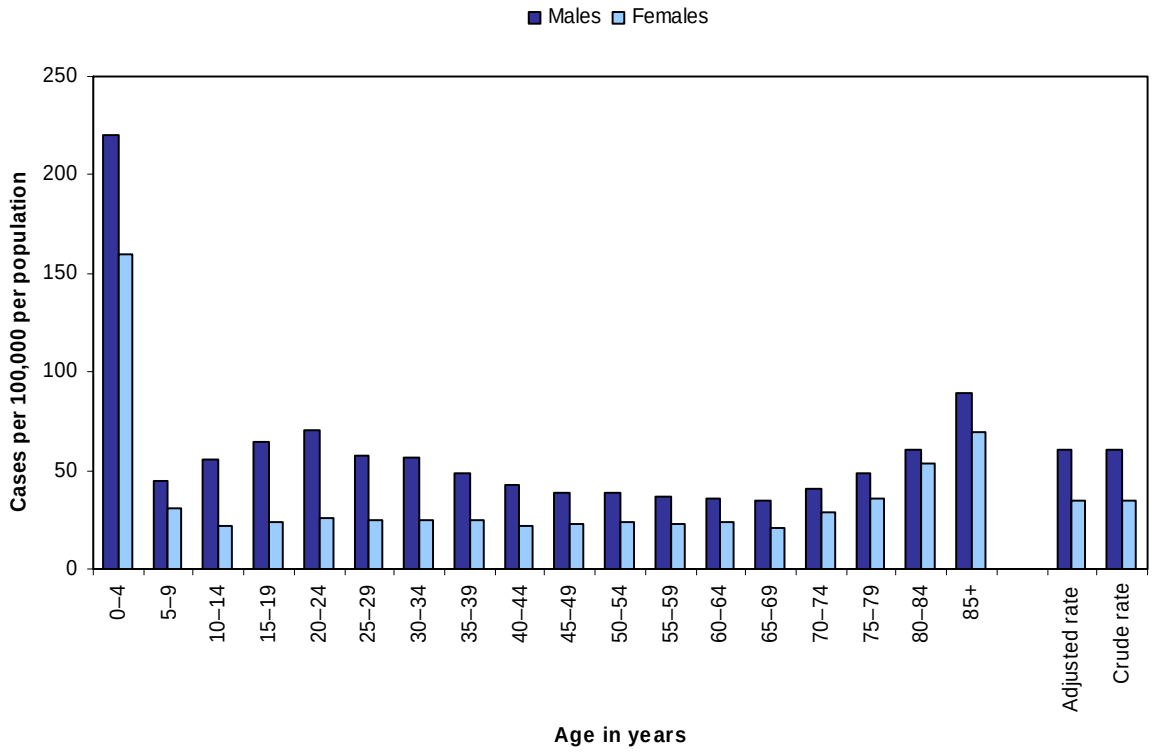

Figure 2: Burns and scalds hospitalisation rates per 100,000 by age and sex

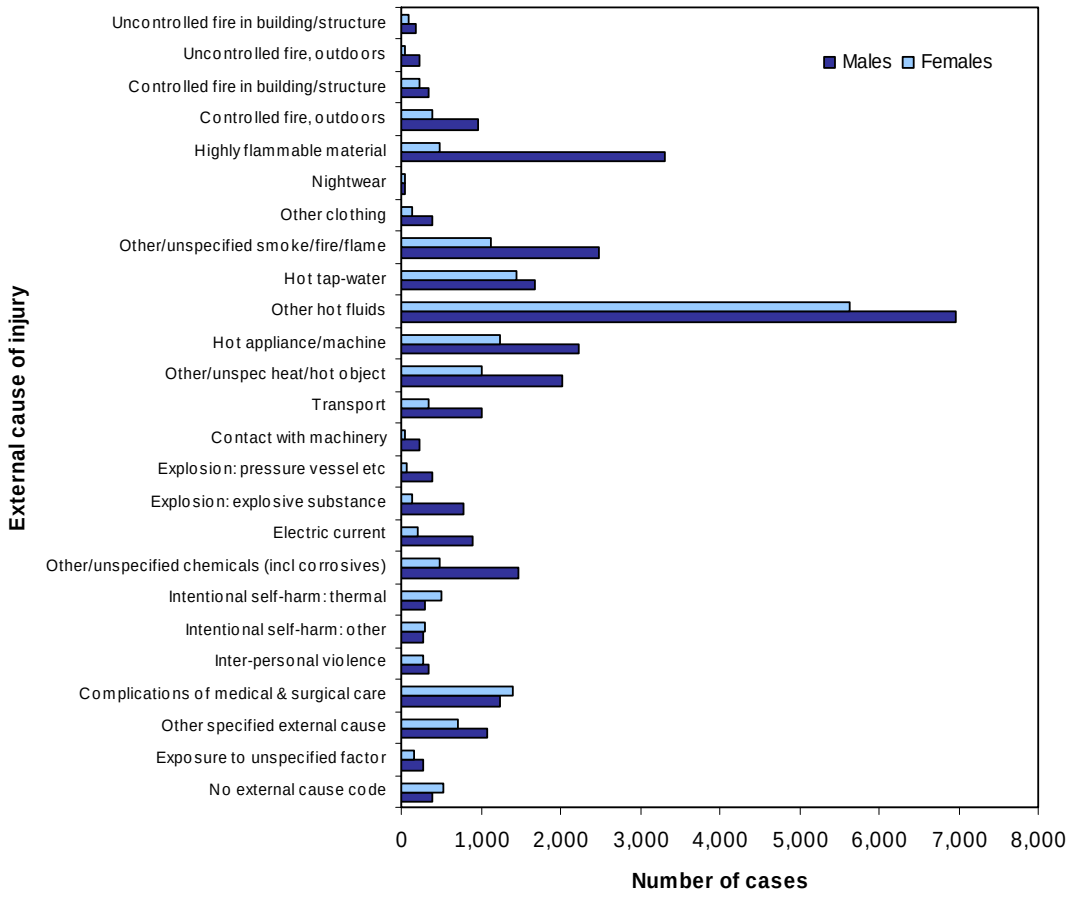

Figure 3: External causes of burn and scald injuries

Table 1: External cause of burn and scald injury for males

External cause	Cases	% of all cases	Adjusted rate (per 100,000)	Crude rate	Greater than 20% Body Surface Area (%) ^Any depth	Greater than 20% Body Surface Area (%) ^^Full thickness
Thermal:						
Non-intentional						
Hot fluids	6,956	24.0	14.3	14.4	4	0.6
Hot tap-water	1,669	5.7	3.5	3.5	8	0.7
Highly flammable material	3,321	11.2	6.8	6.9	15	3
Hot appliance/machine	2,232	7.6	4.6	4.6	1	<0.1
Controlled fire, in building/structure or outdoors	1,302	4.4	1.3	1.4	5	2
Uncontrolled fire, in building/structure or outdoors	418	1.4	0.4	0.4	14	7
Nightwear	49	0.2	0.1	0.1	4	4
Other clothing	388	1.3	0.8	0.8	7	4
*Other/unspecified smoke/fire/flame or heat/hot object	4,516	15.3	4.7	4.7	3	1
Intentional						
ISH: thermal	308	1.0	0.6	0.6	28	15
ISH: other	267	0.9	0.6	0.6	8	3
Interpersonal violence	341	1.2	0.7	0.7	20	6
Non-thermal:						
Transport	1,005	3.4	2.1	2.1	7	3
Contact with machinery	224	0.8	0.5	0.5	6	1
Explosion: pressure vessel	395	1.3	0.8	0.8	15	2
Explosion: explosive substance	787	2.7	1.6	1.6	17	4
Electric current	902	3.1	1.8	1.9	6	3
Other/unspecified chemicals	1,462	5.0	3.0	3.0	4	0.7
Complications of medical & surgical care	1,249	4.2	2.7	2.6	3	1
Exposure to unspecified factor	285	1.0	0.6	0.6	1	0.4
No external cause code	391	1.3	0.8	0.8	38	17
**External cause other than those listed above	1,080	3.7	2.3	2.2	7	1
Total	**29,547**	**100.7**	**33.4**	**33.7**		

**This category contains residual cases that meet the ICD-10 criteria for burns hospitalisations but for which our data does not provide specific details regarding the external cause of the injury.*

***This category is comprised of injury cases including ICD-10-AM codes for burns (T20–T31) but in which the left most external cause code does not refer to contact with a hot object or substance (see list in Data Issues).*

^Denotes burns of any thickness, as categorised via the 4th character of ICD-10 code T31 (rephrase) and excludes cases where the categorisation was missing

^^Denotes burns of full thickness, as categorised via the 5th character of ICD-10 code T31 (rephrase) and excludes cases where the categorisation was missing

External causes of burn and scald injuries

Tables 1 and 2 summarise the events and circumstances that led to hospitalised burn and scald injury, for males and females. In most cases (males 66%; females 76%) the first (left-most) external cause of injury code in the record, relating to a burn, referred to a type of exposure with obvious potential for thermal injury. Of these, the great majority, (males 95%; females 92%) referred to non-intentional (i.e. accidental) events, involving contact with hot water or other hot fluids, or with fire, burning objects, or hot objects. Much smaller proportions of burn and scald injury cases were attributed to interpersonal violence (males 1.2%; females 1.7%) or intentional self-harm (males 1.9%; females 4.8%). The remaining cases (males 44%; females 24%) either had an external cause code referring to a different type of exposure (for details see '*External cause not otherwise listed*' in the Data issues section at the end of this briefing) or did not include any external cause codes.

The size and depth of burns and scalds contribute greatly to their severity. The last two columns in Tables 1 and 2 show the proportion of cases of each type in which the size of the burn was recorded as being 20% or more of total body surface area. The first of the two columns refers to burns of any depth, while the second refers to the more serious full thickness burns. Contact with hot fluids, while the most frequent cause of hospitalised burn and scald injury, resulted in lower proportions of cases with large and deep injuries, than the less common exposure to uncontrolled fire and intentional self-harm.

Table 2: External cause of burn and scald injury for females

External cause	Cases	% of all cases	Adjusted rate (per 100,000)	Crude rate	Greater than 20% Body Surface Area (%) ^Any depth	Greater than 20% Body Surface Area (%) ^^Full thickness
Thermal:						
Non-intentional						
Hot fluids	5,634	33.0	11.6	11.5	3	0.5
Hot tap-water	1,457	8.5	3.0	3.0	7	2
Highly flammable material	473	2.8	1.0	1.0	12	4
Hot appliance/machine	1,240	7.3	2.5	2.5	0.3	<0.1
Controlled fire, in building/structure or outdoors	602	3.5	0.6	0.6	3	2
Uncontrolled fire, in building/structure or outdoors	134	0.8	0.1	0.1	22	8
Nightwear	52	0.3	0.1	0.1	14	4
Other clothing	144	0.8	0.3	0.3	8	5
*Other/unspecified smoke/fire/flame or heat/hot object	2,137	12.3	2.2	2.2	7	2
Intentional						
ISH: thermal	508	3.0	1.1	1.0	11	7
ISH: other	303	1.8	0.6	0.6	1	<0.1
Interpersonal violence	285	1.7	0.6	0.6	16	9
Non-thermal:						
Transport	345	2.0	0.7	0.7	17	14
Contact with machinery	54	0.3	0.1	0.1	-	-
Explosion: pressure vessel	66	0.4	0.1	0.1	10	2
Explosion: explosive substance	134	0.8	0.3	0.3	13	6
Electric current	202	1.2	0.4	0.4	2	-
Other/unspecified chemicals	489	2.9	1.0	1.0	0.4	-
Complications of medical & surgical care	1,409	8.3	2.8	2.9	0.6	0.2
Exposure to unspecified factor	157	0.9	0.3	0.3	0.8	-
No external cause code	521	3.1	1.1	1.1	61	0.3
**External cause other than those listed above	717	4.2	1.4	1.5	6	0.6
Total	**17,063**	**99.9**	**31.9**	**31.9**		

**This category contains residual cases that meet the ICD-10 criteria for burns hospitalisations but for which our data does not provide specific details regarding the external cause of the injury.*

***This category is comprised of injury cases including ICD-10-AM codes for burns (T20–T31) but in which the left most external cause code does not refer to contact with a hot object or substance (see list in Data Issues).*

^Denotes burns of any thickness, as categorised via the 4th character of ICD-10 code T31 (rephrase) and excludes cases 'where the categorisation was missing'

^^Denotes burns of full thickness, as categorised via the 5th character of ICD-10 code T31(rephrase) and excludes cases 'where the categorisation was missing'

Groups most at risk

The data reveal various patterns relating to burns and scald injury hospitalisations, which highlight population groups with special vulnerablility. Three groups showing high rates in Figure 2 have been selected for consideration here: young children, males in their late teens and early twenties, and older persons. We have also given attention to several other topics.

Scalds in children aged 4 years and under

Indicator	Males	Females	Persons
Cases	7,209	4,950	12,159
Per cent of all cases	59	41	100
Cases/Rate per 100,000 population (crude)	220.4	159.3	190.6

Young children have had the highest rates of hospital admission due to burns in Australia in recent years (1999–00 to 2003–04). During this period, a total of 12,159 cases involved children aged less than 4 years old. 63% of burn related hospital admissions for children in this age group occurred as a direct result of scalding, with the majority of these injuries occurring in the home. The peak in burn and scald injuries to young children is largely due to scalds by hot drinks, foods, fats and cooking oils, which account for over half of the hospitalisations for scalds to children aged less than 4 years old (n=6,169), and with scalds resulting from hot tap water accounting for 12% of injuries of this type (n=1,467).

Within this age group, infants aged less than 12 months accounted for over 15% (n=1,970, 16%) of the burns and scald admissions, with 84% (n=1,654) of the injuries to infants aged under 12 months occurring from 7 months onwards (Figure 4). This reflects the increasing mobility and ability to reach and grasp objects characteristic of infants this age (Edwards & Sarwark, 2005). Just as is the case with children aged over 12 months, the majority of these injuries were caused by scalds, and occurred in the home in 75% of cases.

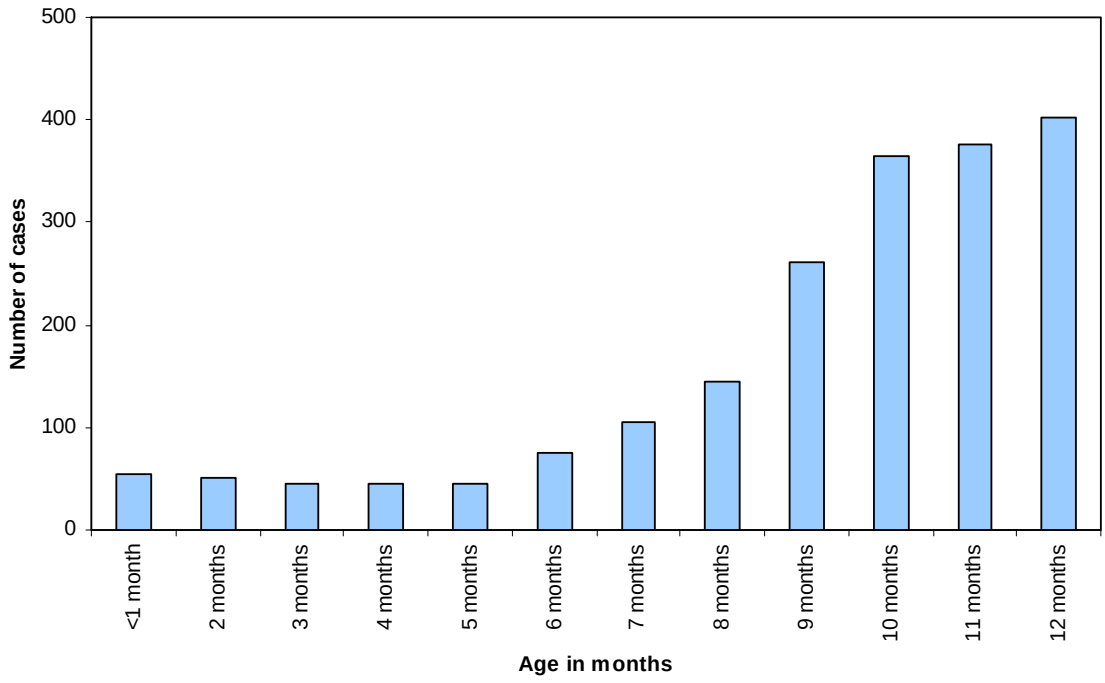

Figure 4: Burns and scalds in children aged less than 12 months

Another category of event that deserves mention is exposure to *controlled fires, outdoors*. This type of accident represented a risk to children aged less than 4 years old, with 368 children (226 males and 142 females) hospitalised during the period 1999–00 to 2003–04. Although the data collected included many records where the location of the fire was unspecified (38%), those which did indicated that more than a quarter of injuries took place in the home (27%). While the available data do not specify the type of controlled outdoor fire, things such as barbecues are likely to account for part of the total.

Activity-related pattern of burn injuries for young males

Males in their teens and early adult years were more likely to be hospitalised due to burns than in mid-childhood or in later adult years (Figure 2). No equivalent peak was found for females. The two age groups 15–19 and 20–24 alone account for 15% of the burn and scald injuries sustained by males. This distinctive age profile is particularly noticeable for injuries resulting from exposure to *highly flammable material* (e.g. petrol), with males accounting for 88% of these hospitalisations and a sharp increase in this type of injury at ages 10–14 through to 25–29 years, then declining at older ages. The males in this age range accounted for almost half (46%) of the total burn and scald injuries attributed to this particular cause. Compared with 3,321 cases involving males, females were only injured in this way in 473 cases. The age-adjusted rate for males (for injuries in this category) was 6.8 per 100,000, and for females was 1.0 per 100,000.

In addition, although the majority of burns and scalds for all age groups and in all categories took place in the home, *trade and service* as well as *industrial and construction* areas were listed as the site of a number of burn and scald injuries for young males aged 15–24 years old (12% and 15%, respectively).

Adolescents and young adults of both genders also feature prominently when considering burns and scald injuries that occur while *working for income*. Even so, more than 1 in 5 (22%) males aged 15–19 through to 35–39 sustained their burn and scald injuries in this manner. However, in the 25–34 year age group, a higher proportion of females sustain burns and scalds while undertaking domestic tasks than whilst working for income.

Burns and scalds in the elderly

Although more attention tends to be paid to burns and scald deaths in the elderly than to their hospitalisations, this subset of the population is the final group at particular risk of such injuries. What is especially noteworthy is that rates of hospitalised scalds, those involving hot tap-water and other hot fluids, rise with age after around 70 years, with scalds representing 24% of burn hospitalisations for those aged 70–74, and rising to 40% in those aged 85 and over.

Intentional self-harm

Whilst injuries resulting from *Intentional Self-Harm* (ISH) are not very common, when they do occur they are often very serious, involving large, full thickness burns, which require long-term specialised treatment. A fatal outcome is common. During the period 1999–04, 30% of burns resulting from ISH were classified as full thickness burns.

The average length of stay for all hospitalisations resulting from ISH—thermal (full thickness or not) was 17.87 days, which is more than three times the length of stay attributed to scalds with *hot tap water* (5.60 days) and nearly four times the stay associated with burns from *controlled fires* (4.71 days).

Length of stay and burn severity

Fortunately, most hospitalised burns are not very severe. For the period 1999–04, over two-thirds (69%) of all burn or scald related injuries resulted in a hospital stay of between 1 and 3 days, with an admission period of 1 day or less accounting for 90% of these cases. Furthermore, a higher number of hospitalised injuries involved partial thickness burns than full thickness burns. Of the 46,611 cases requiring hospitalisation during this period, almost half (49%) were classified as burns of partial thickness, whilst less than a quarter (24%) were listed as full thickness burns. In addition, for those who sustained full thickness burns, 96% affected a body surface area of less than 10%.

The main exceptions to this pattern were found for injuries caused by the ignition of nightwear or other clothing, intentional self harm, transport accidents, contact with machinery and contact with electric current, for which the majority of injuries were large, full thickness burns. In fact, over half of burns caused by nightwear ignition resulted in full thickness burns (58%), as did almost half (49%) of the burns due to the ignition of other clothing.

Other studies

The cost of burns and scalds

The Australian Institute of Health and Welfare (2004) estimated that the cost to hospitals due to admitted cases of burn and scald injuries in Australia for the single year 1999–00 was $40.2 million, and for 2001–02 was about $38.7 million.

Burn and scald injuries account for only a small proportion of total health system costs of injury. According to Watson and Ozanne-Smith (1997), injury due to unintentional exposure to fire, flame etc accounted for about 3% of total lifetime cost[1] for all injury in Victoria for the period 1993–94. Potter-Forbes and Aisbett (2003) put the cost of burns at around 2%, in their analysis of injury costs for New South Wales for the period 1998–99. Both studies suggest that costs to the health system account for most of the total cost attributable to burns and scalds, with Watson and Ozanne-Smith putting the figure for Victoria at 66% of total lifetime cost, and Potter-Forbes & Aisbett at 72% for New South Wales. In a study focussing on costs across Australia in the year 1993–94, Mathers and Penm (1999), found that 77%, of the $65.6 million total health system cost attributed to burns, were classified as hospital costs ($50.8 million).

Young children

Petridou and colleagues (1998) conducted a case-control study in Greece, looking at the risk factors associated with childhood burn injuries that occurred in the home. Among the 239 cases studied, the kitchen appeared to be the place of highest risk. Over 65% of injuries occurred in this room, despite data suggesting that this was not the room in which children spent the majority of their time. Hot liquids were the mechanism by which the injury was sustained in over 60% of cases, over 61% of the injuries resulted in second degree burns, and the upper limbs reported as the most common primary body part affected (39%). Although the data used to create this report do not provide details about the specific areas of the home that the majority of injuries occur, our findings confirm that the home is the site of 75% of the 12,159 burn-related injuries for infants and toddlers aged 0-4 years, and that scalds are the most common type of hospitalised thermal injury to children this age (63%).

Drago (2005) conducted a study into kitchen scalds in children under five, over a 6 year period, in an effort to understand why interventions aimed at common causes of these injuries (i.e. the child grabbing, spilling or overturning a container of hot fluid onto themselves or from containers of hot fluids being pulled down and onto the child from elevated surfaces, such as a stove) did not make parents more aware of the potential danger in their kitchens, and their child's ability to put themselves in harm's way. This paper noted that scalds were 5 times greater in 1 year olds than those less than 1 year old, and almost twice as high compared to 2 year olds, speculating that this is due to the incongruence between physical and cognitive ability at this age. Whilst infants of this age experience greater mobility than those aged less than 1 year, they are yet to acquire the understanding of danger attained by most 2 year olds. Our results support this finding, with 85% of the scald injuries observed in infants occurring between 7 and 12 months.

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1 '*The total lifetime cost of injury estimated in this study consists of costs relating to the treatment of injury (i.e. direct costs) and costs relating to the loss, or partial loss, to society of the productive efforts (both paid and unpaid) of injury victims and care-givers in the case of children (i.e. indirect costs).'* *http://www.monash.edu.au/muarc/reports/muarc124.html*

Adolescent males

Young adolescent males were identified as being the population most vulnerable to injuries resulting from *flammable liquid burns*, representing 95% of the 59 cases studied, in a paper by Henderson, McConville, Höhlriegel, Fraser & Kimble (2002). Of these, 86% were aged between 8 and 14 years old. Petrol was most commonly reported as the liquid causing the injury (83%), with aerosols (10%) and methylated spirits (7%) the other flammable agents recorded. In 64% of all cases the injury was sustained on the property the child resided at, with campsites (19%) and friend's places (12%) other likely venues. Over half of these injuries (53%) occurred as a result of the victim himself *throwing flammable liquid onto a fire*, whilst *another person* was responsible in nearly 30% (28%) of cases. In preparing this briefing, we didn't have access to information about who was responsible for the burn injury, however our findings are in line with those of this study, and confirm that young males are more at risk of burns sustained as a result of contact with *highly flammable material*, than females of the same age, and older males. Those aged 10–14 through to 25–29 years were particularly susceptible, and accounted for over 45% of the burns attributed to this cause.

Outdoor fires

Fires associated with the outdoors have also been of interest, with Pegg (2005) noting that 73% of burn injuries occurring between 1997 and 2003 were associated with barbecues and campfires, and thus were more common in the warmer months. As a result the current investigation of this briefing, it was noted that children aged less than 4 years were susceptible to injury as a result of exposure to *controlled fires, outdoors.* This is an observation echoed in the burns literature. In their study into outdoor fires, Phillips, Kassir, Anderson & Schiller (1998) list small children, and also intoxicated adults, amongst the majority of the 107 cases they examined. Nearly a quarter of those injured were aged less than 3 years, almost half (48%) were aged over 20 years and more than 75% (76%) were males. The authors noted that the injuries were mostly preventable and that burns to small children could have been avoided with better supervision by parents or caregivers, and barriers placed around the fire area. A public education program focussing on common fire hazards was also suggested.

Older adults

Mention has been made in this briefing about an increased rate of scalds from hot tap water and other hot fluids in older adults. In particular, we found that the risk of scalds rises from 24%, at approximately 70 years, to 40%, in adults aged 85 and above. Although little information was found in the literature on hospitalised burn injuries in the elderly in Australia, a study from the USA by Chang, Edelman, Morris & Saffle (2005) noted patients over 65 years of age comprised 8.5% of burns admissions, and that adults aged 75 years and over are more than 5 times likely to die from a burn injury than younger adults who have sustained the same sized injury. Although their paper didn't focus specifically on scald injuries, it highlights the seriousness of burn-related injuries in older adults as the authors report the thinning of the skin that occurs with age, the extra time it takes for older skin to regenerate, reduced or impaired mobility, failing sight and hearing, and generally slower reaction times which characterise the ageing population, and which may account for the prevalence of burns in the elderly. In addition, they note that the reliance upon caregivers and reduced mobility make this group similarly vulnerable to young children, and it is suggested that this population, and their caregivers, should be targeted for burns prevention programs.

First aid

In addition to prevention programs, studies regarding the need for effective first aid administration of burns and scalds have been prevalent in the literature. McCormack, Hei & Martin examined the adequacy of pre-hospital management of minor burns in children by parents, care-givers and health care workers in New South Wales. Results of their investigation revealed that out of 109 cases presenting to the Children's Hospital at Westmead in Sydney, only 24 had received adequate first aid by parents or care-givers. Of the remaining 85, 55% (n=60) received inadequate first-aid from other health professionals including general practitioners (n=14), local hospital staff (n=22), the Children's Hospital at Westmead (n=22), and others, including pharmacy staff, ambulance officers, etc (n=2). The authors note the need for education about first-aid for burns, at all levels of health care and in the community as a whole.

In a paper investigating childhood burns in Vietnam, Nguyen, Gun, Sparnon and Ryan (2002) identified early cooling as a simple and effectual method for preventing the progression of burns into serious injuries requiring grafting procedures. The authors reported that 49% of the children they treated had not received adequate first aid for their burn but that for those who had received immediate cooling of the burn site, there was a 32% reduced need for grafting procedures.

Similarly, a study by Skinner and Peat (2002) examined first-aid approaches in a New Zealand community and the subsequent impact on hospital treatment outcomes. Authors noted that scalds were the type of injury that benefited the most from immediate and efficient first aid, citing a reduction in skin grafting procedures of 16% (from 20% to 4%). Such findings are especially pertinent considering that in this study 65.5% of the burn injuries experienced by children aged less than 10 years old were scalds. Results from this study highlighted the utility of a public education campaign addressing effective first aid administration.

Following such a multi-media public awareness campaign into the importance of burns first aid, Skinner, Brown, Peat and Muller (2004) carried out an analysis of its effectiveness. Results revealed that children in this age group still represented the greatest number of burns patients despite the intervention, however there was a difference between pre (66%) and post-campaign hospital admissions (54%), with a reduction in the amount of in-patient procedures corresponding to an increase in out-patient procedures.

Prevention campaigns

In the burns literature there have also been a number of papers addressing the success of prevention campaigns and alternatively, barriers to prevention effectiveness. Streeton & Nolan (1997) described the reduction in burns admissions in children, over a 25 year period from 1970–1994. The results highlighted the efficacy of changes to legislature regulating sleepwear standards (labelling practices for flammable fabrics), to improvements in domestic heating practices, changes to regulations and standards for the delivery temperature of hot tap water, and to mandated improvement to the safety of household products. The authors claim a notable reduction in admissions for flame burns and scalds as a result of these reforms. Furthermore, some credit was also awarded to burn prevention programs aimed at educating the public to risk factors and prevention strategies.

In their paper addressing flammable liquid burns in children, Henderson, McConville, Höhlriegel, Fraser & Kimble (2002) speculate that a prevention campaign comprised of community education aimed specifically at the population most at risk and combined with the introduction of legislation for the secure storage of flammable liquids in the home, might be a step toward reducing this preventable injury.

In a paper focussing specifically on kitchen scalds in young children, Drago (2005) acknowledged that intervention efforts are not enough to reduce the occurrence of burns and scalds, and recommended that when designing interventions aimed at burns injuries in young children, that developmental factors are considered and that parents are educated about the relationship between the stages of their child's development and injury risk. Using the prevention model outlined by Cohen and Swift (1999), Drago suggests 6 actions that could be used for a systems approach to burns prevention: a) clinicians advising parents to be particularly vigilant to scald risks from 9 months until 2 years of age, b) a community scald awareness day to increase public awareness, c) injury prevention training for child care providers, addressing all 5 energy sources of injury, d) a community coalition to build a partnership approach, e) a fixed slot on community radio or television for regular local injury announcements, and f) the design of a scald resistant pot/saucepan.

Discussion

This report shows that burns and scalds are common, the greatest number of events resulting in burn injuries take place within the home, and most are not very severe. The majority are classified as partial burns, and affect a body surface area of less than 10%. Most at risk of burn injury are children aged less than 4 years, young males and older adults. For such populations the rate of hospitalisation is high, and according to literature in the area, the majority of these injuries are preventable.

Although the majority of burns and scalds result in a hospital stay of 1 day or less, serious burns represent a great cost to the health system, by their very nature. To illustrate, injuries resulting from intentional self harm are not common, but are characterised by full thickness burns, which are associated with hospitalisation periods much longer than less serious and more frequently occurring burns and scalds. Such injuries are often life threatening, and if survived involve skin grafts, the management and prevention of secondary infections and extensive rehabilitation, such that the initial admission to hospital is rarely the last visit.

The information contained in this report and related literature point towards a need to highlight the importance of burn prevention strategies for the home, a need for burn prevention and first aid education to parents and caregivers of young children, and the caregivers of older adults, and legislation regarding the secure storage of flammable material in the home.

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Data issues

Case inclusion criteria

This report includes records from the Australian National Hospital Morbidity Database where the episode ended during the five years 1 July 1999–30 June 2004, and any diagnosis field (i.e. principal or additional diagnosis) contained an ICD-10-AM code in the range T20–T31.

Separation records recorded as being inward transfers from other acute hospitals were omitted from case counts in this report, to reduce multiple counting of cases transferred between hospitals.

Age adjustment

Some all-ages rates have been adjusted for age to overcome the effect of differences in the proportions of people of different ages (and different injury risks) in the populations that are compared. Direct standardisation was employed, taking the Australian population in 2001 as the standard. Where crude rates are reported, this is noted.

External causes not otherwise listed

In addition to the thermal and non-thermal categories included in the external cause tables (Tables 1 & 2), there were also a large number of cases from the hospital data that met the ICD–10-AM criteria for a burn or scald injury (T20–T31), but for which the burn or scald was not the primary reason for hospitalisation. For these cases, the first (left-most) external cause code falls outside the group describing thermal causes. The external causes recorded for these cases were often falls, being struck by, or jammed against an object, contact with power tools or other household machinery, exposure to sunlight, exposure to ultra-violet or man-made visible light, exposure to excessive natural heat (as in the case of heatstroke), and exposure to various gases, vapours and solvents likely to cause damage when inhaled.

Costs of burns and scalds

Estimates of the costs of illness or injury are always very susceptible to conceptual scope, the approach used for costing and the cost model used. None of the studies sourced for this report used the same method and so comparability is limited.

Data quality

This report uses data collected from state and territory hospitals. After coding and collection from the states and territories, the data is further processed by the AIHW and NISU. The geographical spread of the data and the large number of people involved in its processing increases the risk of inconsistencies across time and place in the data. Variations in reporting and coding continue to exist across jurisdictions, although standard classifications and formal coding guidelines have been in place for some years.

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