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CHILD ACCIDENT PREVENTION FOUNDATION OF AUSTRALIA

Report on the Victorian Scalds Prevention Campaign - *Hot Water Burns Like Fire*

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1. INTRODUCTION

Victoria's scalds prevention campaign, *Hot Water Burns Like Fire*, was launched in June 1995 as part of the state wide injury prevention strategy, *Taking Injury Prevention Forward*. The campaign has been coordinated by Kidsafe Victoria with funding from the Department of Human Services, VicHealth, Gas and Fuel, Rinnai Australia and the Plumbers, Gasfitters and Drainers Board. Contributions to the campaign, both financial and in kind, have been made by

many organisations from government, nongovernment and private sector reflecting a truly intersectoral approach. The key players so far have been Kidsafe Victoria, Department of Human Services, The Plumbers Board, Gas and Fuel, hot water system manufacturers and the Safety Centre.

The NESB component of the campaign was funded by the Department of Human Services, Kidsafe Victoria, the Safety Centre at the Royal Children's Hospital and Aquamax.

The Kidsafe media component of the campaign has been funded entirely by the private corporate sector, namely United Energy, NRMA Insurance, Easy Music 3MP and Channel 7 and Channel 9.

The report of the scalds prevention campaign provides information on:

- the rationale, including context and background
- goals, objectives and strategies
- impact of strategies to date
- unintended effects of the campaign (manufacturing industry)
- conclusions and recommendations.

2. THE RATIONALE - Scalds From Hot Tap Water

Each year in Australia, approximately 400 young children are admitted to hospital after receiving a scald from hot tap water. In Victoria, four children each week under five years of age present to hospital emergency departments with hot tap water scalds and one or two of these children require admission.

The majority of these scalds occur in the bathroom. The critical factor in these injuries is the temperature at which hot water is delivered from the bathroom tap. Australian Standards and Kidsafe Victoria recommend that the temperature of hot tap water in the bathroom should not be above 50 degrees Celsius. Prevention of scalds from domestic hot tap water has been identified as a priority in *Taking Injury Prevention Forward*.

3. THE SOLUTION

To achieve the best outcome from a health promotion initiative such as a scalds campaign, a multiple strategy approach tackling the issue from environmental, behavioural and legislative angles is recommended.

3.1 Environmental:

- Reduce the temperature of hot tap water at the tap to 50 degrees Celsius by:
 - installing a technical device, such as a thermostatic mixing valve (or tempering valve) on existing hot water systems
 - adjusting the preset maximum temperature setting of the hot water system to 50 degrees Celsius or using a mixing or tempering valve
 - installing a hot water system with dual temperature controls
 - placing a device to switch off the flow of water when it rises above 50 degrees Celsius

3.2 Behavioural:

- Always run cold water before hot water in the bathroom
- Always supervise young children in the bathroom
- Close or place a barrier across the bathroom door when not in use

3.2 Legislative:

- Legislate for the adoption of Plumbing Code of Australia AS3500.4 Part 4.

4. OBJECTIVES AND TARGET GROUPS

4.1 Goal:

To reduce the incidence and severity of burns and scalds among Victorian children.

4.1 Objectives:

- Objective 1. To encourage parents and the broader community to become aware of the high incidence and severity of burns and scalds suffered by children in Victoria from domestic hot water in the bathroom and kitchen. (Key players: Licensed Plumbers and Maternal and Child Health nurses.)
- Objective 2. To promote the key message *Hot Water Burns Like Fire* to the target audience.
- Objective 3. To encourage parents and carers to ensure small children are always supervised in the bathroom and kitchen.
- Objective 4. To encourage people to reduce the maximum temperature of hot water at bathroom outlets to 50 degrees Celsius by installing appropriate safety products and observing safety procedures.

4.2 Target groups:

House holders/consumers

- Parents with children under five years of age

Service providers

- Primary care professionals: Maternal and Child Health Centres
- Early Childhood Centres
- Paediatricians
- General Practitioners
- Community Health Centres
- Hospitals with Midwifery Units
- Licensed plumbers

5. STRATEGIES

- 5.1** Every licensed plumber in Victoria received a liquid crystal temperature card (20 000 distributed) and a special edition of their newsletter dedicated to burns and scalds prevention including statistical information from Kidsafe Victoria on burns and scalds injuries and the availability of courses on the installation of the various technical devices to reduce the temperature of hot water. A media launch of the campaign, including coverage on all Melbourne television stations, at the Plumbers Board in June 1995.
- 5.2** Health promotion kits were distributed to 10 000 primary care providers throughout Victoria for distribution to their client group. Each kit contained Burns and Scalds Prevention brochures, a liquid crystal temperature card, 10 Kidsafe *Hot Water Burns Like Fire* brochures, a media release and a product list. Three primary care forums were held to give primary care providers the opportunity to learn and actively discuss campaign strategies.
- 5.3** 50,000 Kidsafe *Hot Water Burns Like Fire* brochures and liquid crystal temperature cards were made available by Kidsafe Victoria through Gas and Fuel and Rinnai Australia, to the public, free of charge, from all Gasmart stores across Victoria. A media launch by Kidsafe at Gas and Fuel in November 1995.
- 5.4** 15 000 Kidsafe *Hot Water Burns Like Fire* brochures were translated into Vietnamese, Chinese, Arabic and Turkish and distributed through various ethnic centres, MCH centres and the Safety Centre.

- 5.5** Safety Centre, in conjunction with Kidsafe, Department of Human Services and Aquamax produced a promotional display translated into the above languages.
- 5.6** Safety Centre provided information through the SAFE Program to kindergartens and parents in three municipalities.
- City of Moreland: Aquamax supplied thermometers for distribution to 199 families of whom 77 turned down their hot water service, 95 families had water at 50.55 degrees Celsius and other families took other actions.
 - City of Yarra: 121 families turned down their hot water systems, 50 families already had hot water temperatures at 50 degrees Celsius. Issues around hot water temperatures in public housing were raised with the Ministry of Housing.
 - City of Maribyrnong: conducted a program outlining low cost alternatives for preventing scalds for low income African refugees.
- 5.7** Distribution of a total of 400 000 Kidsafe *Hot Water Burns Like Fire* brochures to:
- St John Ambulance (35 000)
 - Museum of Victoria Children's Museum (15 000)
 - VicSwim (5 000)
 - Victorian Urban Land Authority (5 000)
 - Archicentre (5 000)
 - Maternal and Child Health nurses (100 000).
- 5.8** A mini media launch was conducted by Kidsafe at the Shire of Nillumbik. Further launches are planned for Gasmart stores in country regions, such as Albury and Ballarat.
- 5.9** A launch of the NESB component of the campaign by Kidsafe, Department of Human Services and the Safety Centre (Royal Children's Hospital) at the North Richmond Community Health centre.
- 5.10** Production of a television community service announcement by HSV7 played for two weeks in December 1995 and February 1996 in Melbourne. The commercial was also shown through the Prime regional television network across Victoria. A segment on "A Current Affair" GTV 9, discussing the scald prevention campaign was shown throughout Australia.
- 5.11** A scalds prevention video which included first aid procedures was distributed to all MCH Centres in Victoria and shown to new mothers' groups.
- 5.12** Radio commercials on the campaign message *Hot Water Burns Like Fire* on Easy Music 3MP, Magic 693 and 3AW. A number of printed educational columns in the Herald Sun newspaper have been sponsored by United Energy
- 5.13** Gas and Fuel prepared a major display window on the *Hot Water Burns Like Fire* theme in a Melbourne city street (Flinders Street). Other smaller displays were included in other metropolitan stores.

5.14 Shopping centre displays at Melbourne metropolitan shopping complexes.

5.15 Government Ministers endorsing the Victorian *Hot Water Burns Like Fire* campaign at the various launches were: the Minister for Health, the Minister for Planning, the Minister for Energy and Minerals and the Minister Assisting the Premier on Multicultural Affairs.

6. CAMPAIGN BUDGET

6.1 Financial Support

Department of Human Services	\$95 000
Salary and brochure production	
Salary and NESB brochure production	\$20 000
Plumbers Board	\$50 000
Gas and Fuel and Rinnai Australia	\$75 000
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Total	\$240,000

6.2 Estimated 'inkind' Support

Production of 'A Current Affair' segment, television and radio commercials, newspaper columns and industry advertising : United Energy, NRMA Insurance, Channel 7, Channel 9, Easy Music 3MP, Magic 693, 3AW, Gold FM.

Display windows by Gas and Fuel and Rinnai.

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Total	\$300 000

7. IMPACTS OF STRATEGIES TO DATE

An external consultant was contracted to evaluate the extent to which the campaign achieved its objectives of enhancing awareness of the problem and of measures to prevent burns and scalds injuries in children. (For detailed results of that evaluation see: Rosier, M. *Evaluation of burns and scalds campaign*). This evaluation focused on the three target groups: primary care providers, parents and plumbers located in both rural and metropolitan areas across the state.

Two hundred primary care providers were surveyed by means of a mail questionnaire distributed to MCH centres, child care centres and preschool centres (n = 50; 100; 50) randomly selected from a Department of Human Services database. An 80% response rate was received.

A sample group of parents (n = 300) was also surveyed by means of a mail questionnaire distributed through the above centres (n = 80; 140; 80). A two stage random sample design was used to select centres then parents. An 80% response rate was achieved.

Two hundred and fifty plumbers were surveyed by means of a phone interview. This sample was randomly selected by the Plumbers Board from their list of members with a response rate of 79% achieved.

7.1 Awareness of campaign (Objectives 1 and 2):

Professionals:

Overall, 85% of the health and child professionals were aware of the campaign:

98% of Maternal and Child Health nurses

83% of child care centre professionals

76% of preschool centre professionals (see Table 1).

Table 1 Awareness of Burns and Scalds Prevention Campaign

	M&CH	Child Care	Preschool	Total
Yes, a lot	82%	27%	24%	40%
Yes, a little	16%	56%	52%	45%
Not at all	2%	17%	24%	15%

n (total sample)	50	97	46	193
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There was some difference in awareness of the campaign between health and child care professionals. Virtually all (98%) Maternal and Child Health nurses interviewed were aware of the campaign and most (82%) were "very" familiar with it. By comparison, while most child care professionals were aware of the campaign (76% in child care, 83% in preschool) most (52% and 56% respectively) indicated that they were aware "a little" rather than a "lot".

Parents:

One third of parents (37%) (surveyed through MCH centres) had heard advertisements about the campaign in the past three months.

Plumbers:

Eighty six percent of plumbers remember receiving the temperature testing card; 82% remember reading the special issue in the plumbers newsletter on hot water scalds and the prevention campaign.

7.2 Knowledge of burns and scalds:

Parents:

Professionals assessed the campaign as having a significant impact on parents' knowledge of the nature and severity of hot water scalds. Overall, professionals who were aware of the campaign thought that parent's knowledge of the nature and severity had increased (total 56%; "a lot" 24% , "a little" 32%). This impact was most obvious for professionals in Maternal and Child Health centres.

8 out of 10 health professionals reported that the campaign had an impact on parents' knowledge of scalds (45% thought parents' knowledge had increased "a lot" and 37% "a little").

8 out of 10 health professionals reported that parents' understanding of how to reduce scalds had improved (51% said "a lot", 33% "a little"). Among professionals in child care and preschool centres, a substantial group thought that parents' knowledge had risen (42% and 54% respectively) but broadly the same proportion (51% and 43%) did not know if parents' knowledge had risen (Table 2). This may well reflect the degree to which these centres perceive health matters as their central concern or the pattern of interaction between parents and centre staff. It is another indication that work with these centres requires specific measures.

Table 2 Increase in parents' knowledge of nature and severity of injuries

	M&CH	Child Care	Preschool	Total
A lot	45%	14%	17%	24%
A little	37%	28%	37%	32%
Not at all		5%		2%
Don't know	18%	51%	43%	40%
Missing		2%	3%	2%
n (aware professionals)	49	80	35	164

According to the professionals surveyed, there was a similar rise in parents' understanding of how to reduce injuries (Table 3). Parents' themselves had a very high knowledge of the potential for hot water to scald with 99% of the evaluation sample knowing that domestic hot water has the capacity to scald.

Table 3 Increase in parents' understanding to reduce injuries

	M&CH	Child Care	Preschool	Total
A lot	51%	10%	14%	23%
A little	33%	35%	34%	34%
Not at all		3%		1%
Don't know	12%	40%	46%	33%
Missing	4%	12%	6%	9%
n (aware professionals)	49	80	35	164

Professionals:

Seventy percent of professionals surveyed indicated that their knowledge of burns and scalds injuries had increased as a result of the campaign with 46% stating their knowledge had increased "a little" and 24% stating "a lot". Similar increases in understanding of how to prevent burns and scalds were reported.

As an evaluation of their level of understanding of the risk of hot water professionals were asked to indicate the maximum water temperature for bathrooms seven out of ten (70%) of MCH nurses were in the correct range, one in four child care workers

(28%) and one in five preschool centre workers (18%).

There were no significant differences in the knowledge or understanding of professionals in the metropolitan and nonmetropolitan areas.

Plumbers:

Half (52%) of the sample of plumbers working on domestic hot water systems said that their understanding of hot water scalds and prevention had been improved by the campaign material and the resources.

7.3 Behaviour change (Objective 3 and 4):

Parents

About one in four (29%) parents surveyed received a temperature card and, of these, two out of three (63%) said that they had used the card to test their water temperature. Two out of three (62%) of these parents stated they found that the hot water in their bathroom was at an unsafe temperature.

When asked to indicate any action taken at home to prevent burn and scald injuries, about 20% of parents volunteered that they had reduced the temperature of the hot water in the bathroom. Most parents did, however, nominate other measures they adopted to minimise burn injuries

44% nominated that they 'place hot things away while cooking'

21% nominated that they 'take care that young children cannot grab hot items.'

Only 18% of parents nominated that they supervised young children in the bathroom.

Overall, a high level of awareness of burn injury was shown.

Plumbers

Licensed plumbers reported informing their clients about the danger of hot water and the need for temperature control 46% had discussed with clients in the past six months about controlling

temperature of water in the bathroom. and 21% of plumbers had fitted technical devices for clients in the past six months.

Licensed plumbers also reported that some of their customers were aware of the need to regulate the temperature of the water delivered from the hot tap in the bathroom and were requesting the plumbers to make the necessary changes to their systems.

Primary care providers

MCH nurses were much more proactive than other health professionals in dealing with health and safety issues over 90% of MCH nurses recall discussing specific measures with parents.

Four out of ten (40%) child care professionals discussed controlling hot water temperature with parents and about half discussed other means of injury prevention. For preschool professionals, 26% discussed controlling hot water temperature and about 40%, other injury prevention measures.

Table 4 Things to reduce injuries

	M&CH	Child Care	Preschool	Total
Reduce the temperature of hot water in the bathroom	94%	40%	26%	51%
Supervise young children in the bathroom	92%	46%	37%	56%
Place hot things away from young children while cooking	96%	51%	39%	59%
Take care with things that young children can grab (electric cords, tablecloths, etc.)	96%	51%	41%	60%
Other	26%	20%	11%	19%
n	50	97	46	193

7.4 The impact on industry and manufacturers:

- 7.4.1 Through intersectoral lobbying, a positive impetus has been given to industry. The points that Kidsafe Victoria notes:
- 7.4.2 Kidsafe Victoria approached hot water system manufacturers to expand their promotion of products with temperature control. Rinnai Infinity and Aquamax have increased their efforts, profile and sales of appliances through the campaign.
- 7.4.3 New marketing approaches have been established within the private corporate sector in particular, the industry is distributing and promoting forms of temperature measurement/cards and safety literature.
- 7.4.4 There has also been an observable drop in the "hottest of hot water" advertising approach in television, radio commercials and newspaper and instead, mention of "safe temperature for hot water".
- 7.4.5 Increase in sales of Rinnai Infinity and Aquamax of their domestic hot water systems by 90% and 15% respectively in 1996. (Gasmart reports a significant increase in the sales of both Rinnai and Aquamax products from their stores in 1996 across Victoria).
- 7.4.6 It has been reported to Kidsafe that during 1996 there was a 30% increase in the sales of stove guards in Victoria
- 7.4.7 Entry into the field of another manufacturer (Harmon)
- 7.4.8 A publicity campaign in conjunction with Kidsafe Victoria is planned by a Swedish firm selling thermostatic mixing valves.
- 7.4.9 Rinnai Infinity and Aquamax now advertise the safety aspects of their hot water appliances.
- 7.4.10 Gasmart plumbers have now been trained to install the various technical devices; Gasmart stores now display and sell stove guards; Gasmart staff now trained to discuss with customers the maximum hot water temperature recommended and distribute Kidsafe brochures and cards. (All 50 000 temperature cards distributed).
- 7.4.11 An enterprising individual plumber has set up a service to install scald prevention plumbing measures by directly appealing to the public.

7.5 Other evaluations conducted

7.5.1 Activity list included in primary care providers health promotion kit

To gain a snapshot view of campaign activity in children's' and family services an activity list was distributed with primary care providers health promotion kits. (See *Burns and scalds campaign report 1996: Professional education strategy for primary care providers* for evaluation.) One hundred and fifty four activity lists were returned Child and Adolescent Health Unit of DHS. Briefly, analysis showed:

- that MCH nurses, preschool teachers and GPs were the most active in promoting the *Hot Water Burns Like Fire* message during the recording period
- the Kidsafe *Hot Water Burns Like Fire* brochure and the Home Safety Checklist were the most popular information distributed to consumers by all providers groups
- *talks to individuals* were the most frequently occurring activity recorded by providers with the majority of these conducted by MCH nurses
- *referral to Gasmart* was the second most recorded activity
- *talks to groups* and *promotional displays* were also popular activities.

7.5.2 Evaluation of Primary Care Forums

Attendees at three Primary Care Forums held were also surveyed by brief pre and posttest questionnaire (see *Burns and scalds campaign report 1996: Professional education strategy for primary care providers*). Briefly, evaluation of the forums indicated:

- an increase in participants knowledge and awareness of burns and scalds
- that participants had an understanding of key actions families could take to prevent hot water scalds particularly in the bathroom

Another outcome of the Primary Care Forums was the impetus to produce scalds prevention information in other languages.

7.5.3 Koori Preschool and Child Care Workers Forum

A two hour session on the burns and scalds campaign was presented to Koori preschool and child care workers. Key issues raised in group discussions were:

- the need for Koori child care workers to be included on mainstream mailing lists to ensure information is distributed to them
- specific targeting of Koori population through the Aboriginal Housing Board and Aboriginal health workers.

8. CONCLUSIONS AND RECOMMENDATIONS

8.1 Awareness of campaign

Overall, there was a very high level of awareness of the campaign among professionals (85%) and plumbers (80%) and a reasonably high level of awareness (37%) among parents. Television advertisements were the campaign component most frequently seen by professionals and parents. A large percentage of licensed plumbers cited the special feature in their monthly journal 'The Registered Plumber'.

8.2 Knowledge of burns and scalds injuries

Professionals generally reported an increase in their knowledge of burns and scalds injuries because of the campaign. Those who indicated a high level prior to the campaign, naturally showed the smallest increase in knowledge.

While all professionals reported that they considered parents had a "medium" level of knowledge of injuries prior to the campaign and all reported that this had increased as a result, MCH nurses reported at a much high rate (45%) that parents' knowledge had increased "a lot" than child care and preschool professionals (14%; 17% respectively).

Parents themselves indicated a high level of knowledge of burns injury even though only 20% volunteered that they reduced the temperature of the hot water in the bathroom to prevent a scald. Fifty two percent of licensed plumbers reported that their knowledge of scald injuries had increased as a result of the campaign.

8.3 Behaviour change

Even though awareness levels of the campaign were high and professionals reported that they considered parents knowledge of burns and scalds had increased as a result of the campaign, only 20% of parents stated (unprompted) that reducing the temperature of hot water was an action that they took in their own home to reduce scald injury.

8.4 Recommendations

- 8.4.1 Extremely positive and encouraging results have been obtained in this campaign from intersectoral links between government and nongovernment organisations and the private corporate sector. A culture of safety has begun to develop with manufacturers, suppliers and plumbers all taking positive steps towards the promotion of "safer" hot water temperatures and appliances. Future health promotion campaigns need to adopt the successful intersectoral approach, in particular, to utilise the resources of the private corporate sector in the promotion of safety devices and appliances to complement the work of government and nongovernment injury control professionals.
- 8.4.2 Primary care providers are ideally placed not only to disseminate health promotion information to parents and carers but, with adequate inservicing, to educate. The results indicate that Maternal and Child Health nurses, whose primary objective is health education, were more proactive than other health professionals in dealing with the issue of scalds over 90% recall discussing specific counter measures with parents. Future projects should aim to capitalise on the educative skills of Maternal and Child Health nurses but also build these skills in other primary health care providers particularly GPs and preschool and child care professionals. Further assistance through inservicing and extra resources needs to be provided to this group.

- 8.4.3 Future campaigns need to look beyond hot water scalds in the bathroom to other areas of the house where scalds are occurring, such as the kitchen. Work needs to be undertaken with manufacturers to produce an effective spillproof mug. This would not only be beneficial in the prevention of childhood scalds but also scalds in the elderly population. Within the kitchen, further promotion of stove guards and cordless jugs and kettles is required.
- 8.4.4 A publicity campaign is necessary to promote the Victorian adoption of new legislation regarding installation of all new hot water systems (effective July 1997).
- 8.4.5 To permit outcome evaluation of the program, analysis of 1996 data from the Royal Children's Hospital burns unit is required. (This involves a continuation of Dr Streeton's 25 year analysis which ended in 1995. Dr Streeton considers that up to two days would be required to undertake this work.)
- 8.4.6 To continue to promote the *Hot Water Burns Like Fire* campaign and other scald prevention messages through Maternal and Child Health nurses in 1997 (*Hot Water Burns Like Fire* is the theme of Kidsafe Week 1997) in particular to produce *Hot Water Burns Like Fire* posters for distribution through all primary care providers in Victoria.
- 8.4.7 Future campaigns need to include all relevant health promotional material (eg written, newspaper and radio commercials) for NESB parents and carers as part of original campaign plan and not be included as part of subsequent stages.
- 8.4.8 To promote the outcomes of stage one of the campaign to all stakeholders especially primary health care providers so as to encourage their participation and enthusiasm for future initiatives.

Publications and Reports

Rosier, M (1996) Evaluation of burns and scalds campaign
(Photocopy available, please phone Public Health,
Department of Human Services (03) 9616 7477)

Victorian Department Health and Community Services, (1994),
Taking Injury Prevention Forward, Strategic Directions for Victoria 1994,
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Victorian Department Health and Community Services, (1996),
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Public Health Branch, Melbourne

Victorian Department of Human Services (1996)

**Burns and scalds campaign report 1996:
professional education strategy for primary care providers**

**Victorian Department of Human Services,
(1997) Children's Injury Prevention Action Plan,
Public Health Branch, Melbourne**

**Publications available at:
Department of Human Services Level 16,
120 Spencer Street Melbourne,
3000 ph (03) 9637 4012**