Public Health Association of Australia:  
Policy-at-a-glance – Hot Tap Water Temperature and Scalds Policy

**Key message:** PHAA will advocate for –

1. Policy and legislative changes to increase the scope of the heated water temperature regulations to include all domestic residences.
2. Uniform interpretation, application and implementation of the Plumbing Code in all States and Territories.
3. State and Territory governments to provide rebates for the installation of tempering valves for those with the least resources.
4. Collaborative efforts between health authorities, local governments and industry groups to deliver education that highlights the potential danger of hot water and the benefit to be gained by reducing heated water temperature to 50°C in bathrooms.

**Summary:** Each year in Australia around 5,800 people are hospitalised as a result of a burn or scald. Almost 90% of hot tap water scalds requiring admission to hospital occur in the home and over 90% are sustained in the bathroom, primarily as a result of immersion in baths containing water heated to unsafe temperatures. Hot tap water scalds have been shown to be particularly amenable to prevention by reducing the temperature of water delivery from hot taps.

**Audience:** Federal, State, Territory and Local Governments, policy makers, program managers and industry groups.

**Responsibility:** PHAA’s Injury Prevention Special Interest Group (SIG).

**Date policy adopted:** September 2012

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Hot Tap Water Temperature and Scalds Policy

The Public Health Association of Australia notes that:

1. Burns and scalds are devastating injuries which may result in lifelong physical impairment and ongoing psychological consequences.¹

2. Each year in Australia around 5,800 people are hospitalised as a result of a burn or scald.² Scalds resulting from contact with hot drinks, foods, fats, cooking oils and hot water comprise around 45% of all burn injury-related hospitalisations in Australia.³⁴

3. Hot tap water scalds are important as they can involve a greater body surface area than other scalds,⁴ and some evidence suggests that there is a higher mortality rate for hot tap water scalds than other scalds.⁵ Hot tap water scalds account for approximately 10% of burns resulting in hospitalisation among children aged 0-4yrs, and 7% of all burns resulting in hospitalisation.³

4. Groups most at-risk for hot tap water scalds include young children aged 4 years and under, older persons³⁴⁶ and persons with physical / cognitive impairment.⁷ Although these vulnerable groups are at increased risk, a third of all hospitalisations for hot water scalds in NSW for the years 1999-2007 were for adults (24-65 years)⁵ highlighting the risk of hot tap water to all age groups.

5. Almost 90% of hot tap water scalds requiring admission to hospital occur in the home⁸ and over 90% are sustained in the bathroom, primarily as a result of immersion in baths containing water heated to unsafe temperatures.⁹

6. The higher the water temperature the shorter the exposure time required to produce a full thickness scald. At 70°C a full thickness scald will occur in less than one second, at 60°C in around five seconds and at 50°C, five minute exposure is required to produce a full thickness scald.¹⁰ Hot tap water scalds have been shown to be particularly amenable to prevention by reducing the temperature of water delivery from hot taps.¹¹¹²

7. Most domestic storage hot water heaters in Australia are installed to store water at or above temperatures of 65°C. Under the Australian Standard AS/NZS 3500.4, heated water must be stored at a minimum temperature of 60°C, to inhibit the growth of Legionella bacteria.¹³ Concerns about an increased risk of infection with Legionella pneumophila associated with water temperatures below 60°C are not supported by evidence.¹⁴
8. Clause 1.9.2, of AS/NZS 3500.4\textsuperscript{13} stipulates that, all new heated water installations shall, at the outlet of all sanitary fixtures used primarily for personal hygiene purposes, deliver heated water not exceeding:
   i. 43.5°C for childhood centres, primary and secondary schools and nursing homes or similar facilities for the young, aged, sick or people with disabilities; and
   ii. 50°C in all other buildings.

9. Three methods of achieving temperature control are considered to comply with the standard:
   i. the use of a thermostatic mixing valve (TMV) complying to AS 4032.1 and adjusted to an outlet temperature not exceeding 50°C;
   ii. a tempering valve complying with AS 4032.2 and adjusted to an outlet temperature not exceeding 50°C; and
   iii. a gas water heater that restricts the delivery temperature to 50°C and marked with “this appliance delivers water not exceeding 50°C in accordance with AS 3498”.

10. Standard AS/NZS 3500.4 is called up in the Plumbing Code of Australia (PCA).\textsuperscript{15} The PCA is given legal effect by enabling legislation in each State and Territory. However States and Territories can adopt local variations to the Code. For example the NSW variations and provisions to AS/NZS3500.4, introduced in 1999, cover “All heated water installations”.\textsuperscript{16} However, in the NSW provisions the interpretation of the term ‘installation’ is important as it “only applies to the replacement of water heater units when the new unit is in a different location or is a different type of water heating unit”, thus if the same type of heated water unit is replaced then it is not covered under the provisions of the NSW Plumbing Code.

11. Recent evidence suggests that following the introduction of hot tap water temperature regulations in NSW in 1999, the rate of hospitalisations for hot tap water scalds has decreased by an average of 6% per year.\textsuperscript{8}

12. The downward trend in hot tap water hospitalisations was found for infants and toddlers but not those aged over 65 years,\textsuperscript{8} and may reflect that older people are more likely to occupy older houses that they have lived in for a long time which are not subject to the regulations. Insufficient coverage of legislative requirements was cited as the main reason for the lack of success of similar legislation in New York City.\textsuperscript{17}

13. Differentials in hospitalisation rates for hot tap water scalds between persons in the highest and lowest socioeconomic groups remain following the introduction of regulations in NSW,\textsuperscript{7} suggesting the cost of installing a tempering valve may be a barrier to uptake for lower socioeconomic groups, particularly in homes where regulations do not apply.

The Public Health Association of Australia supports the view that:

14. Decreasing the temperature of hot tap water delivered to bathing areas is an effective preventative measure and that lowering temperatures to 50°C will significantly reduce the risk of hot tap water scalds.
15. Although regulations are in place, further safety gains can be made. Increasing the scope of existing regulations to include all new heated water systems is recommended. As a hot tap water unit may be expected to function for between 5 and 10 years, almost a full coverage of homes in Australia could be achieved within a decade.

16. Increases in the uptake of tempering valve installation could be achieved by providing rebates for the installation of tempering valves for those with the least resources.

**The Public Health Association of Australia resolves that:**

17. The National Office and Branches, with advice from the Injury Prevention Special Interest Group, will advocate for policy and legislative changes to increase the scope of the heated water temperature regulations to include all domestic residences.

18. The National Office and Branches, with advice from the Injury Prevention Special Interest Group, will advocate for uniform interpretation, application and implementation of the Plumbing Code in all States and Territories.

19. The National Office and Branches, with advice from the Injury Prevention Special Interest Group, will advocate for State and Territory governments to provide rebates for the installation of tempering valves for those with the least resources.

20. The National Office and Branches, with advice from the Injury Prevention Special Interest Group, will advocate for collaborative efforts between health authorities, local governments and industry groups to deliver education that highlights the potential danger of hot water and the benefit to be gained by reducing heated water temperature to 50°C in bathrooms.

**References:**


ADOPTED 2012

Adopted at the Public Health Association of Australia’s Annual General Meeting in September 2012.