Safe hot tap water and the risk of scalds and legionella infection

The recent paper in Injury Prevention by Jaye et al on the barriers to safe hot tap water highlights the problem I raised last year regarding the perception of plumbers of the risk of legionella infection from hot water systems compared with that of scalds. The paper reports that half the respondents thought it more important to control for legionella than to prevent hot water burns. Much of the blame for this perception can be attributed to the Australian and New Zealand Standard (AS/NZS 3500.4:1997) which sets a maximum temperature of 60°C for hot water storage systems to protect against legionella.

In 1994 the standard was amended to require that the delivery temperature be a public health problem, however, very little is known about the contribution of a domestic water supply to legionella infection (the ideal temperature for growth of legionella is 44°C). The standard was last reviewed in 1997 by a Joint Technical Committee for Plumbing Standards, which not unexpectedly is dominated by plumbers, dismissed this evidence and we are left with a confusing, contradictory, and expensive standard when a simple solution exists. Setting the storage temperature at 50°C, a measure that has been shown to prevent legionella failure to show a relationship between hot water temperature and the disease in domestic installations through the installation of tempering devices. Several years ago the NSW Health Department tried, as part of its “Burns like fire” campaign, to have this minimum revised down to 90°C and presented compelling evidence supporting the view that there would be no increased risk from legionella at this temperature.

This view is also reinforced by the situation in the US where the maximum storage temperature is set at 50°C, a measure that has resulted in a reduction in scalds without any discernible increase in legionella infections. Unfortunately the Joint Technical Committee for Plumbing Standards, which not unexpectedly is dominated by plumbers, dismissed this evidence and we are left with a confusing, contradictory, and expensive standard when a simple solution exists. Setting the storage temperature at 50°C, a measure that has also been implemented in most existing homes, would also protect children and more particularly elderly persons from hot water burns in the kitchen and laundry (a not insignificant problem).

I would also contend that in a warm country like Australia, where during the summer months cold water is often delivered at temperatures exceeding 30°C, it is likely that cold water is a more significant source of legionella infection (the ideal temperature for the growth of legionella is 20–45°C).

The other issue that was touched on in the paper was the feasibility of tempering valves, something which plumbers I have spoken to have alluded to and needs further investigation.

Both scalds and legionella are important public health problems, however, very little is known about the contribution of a domestic hot water supply to legionella. No one would deny that hot water systems are a source of infection, with up to 30% of systems testing positive to the organism, but the one study published examining domestically acquired legionella failed to show a relationship between hot water heater temperature and the disease. On the other hand the evidence of the association between hot water temperature and scalds is compelling.
National Strategy for Suicide Prevention: Goals and Objectives for Action.


In 1999, the publication of Kay Redfield Jamison’s Night Falls Fast (see Injury Prevention, December 2000:6-312) catalyzed national reassessment of suicide causes, prevention, and control in the USA. The book encouraged researchers to help find more and effective ways to prevent suicides and provided a base for institutionalization on suicide prevention.

A National Strategy for Suicide Prevention: Goals and Objectives for Action is the result of a process led by the US Surgeon General. Establishing a National Council for Suicide Prevention made up of not-for-profit organizations and linking a half dozen federal agencies already concerned with suicide. A central part of the process was community involvement which was assisted by public hearings with testimony (including my own). The key elements of a planned national strategy offer a model for the on going dialectic of injury prevention and control planning, development, organizing, initiation, and evaluation.

A mild criticism of Night Falls Fast was that it could have had a more extensive chapter on public health, this is overcome in the National Strategy. A comprehensive public health approach to prevention is tied to essential mental health principles and practices. Goals and objectives are outlined within the framework of UN/WHO guidelines, with short examples of initiatives in other countries.

The goals focus on awareness, intervention, and methodology. From promoting awareness that suicides are a public health problem that is preventable to improving surveillance systems, the goals and objectives offer a tapestry of ideas and approaches. The historical review is, unfortunately, too short an analysis for guidance on real life leadership dynamics. The final goals and objectives of the report are linked to national senior citizens groups, firearm safety design, but, not as yet, to national poison control systems just being enhanced in the USA. The appendices on evaluation of programs, on promising research efforts, of special populations at risk, and on a resource “bookshelf” are exceptional.

The new and promising venture represents a cross section of the national leadership expertise and institutional experiences in the USA. The report’s hope is for some greater fiscal investments in programming and, all in all, comprehensively and effectively covers the full spectrum of an important National Strategy.

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Les accidents de l’enfant en France. Quelle prévention, quelle évaluation?


This book deals with a standard public health topic. For the last 20 years or so, numerous countries have pondered over what strategies they should adopt to reduce childhood injuries. This recent French publication offers a distinctive viewpoint. One question some readers, especially those who may have to struggle with their high school French, may ask is: How useful is this book outside its country of origin? The answer is given in what follows, but in two words, it is potentially “very useful”.

The authors’ stated aims are to identify possible gaps in childhood injury prevention in France, to investigate their causes, and to make recommendations to improve prevention. The book is essentially concerned with children younger than 10 years of age. It emphasizes primary prevention of non-intentional injuries and excludes intentional abuse.

This work is intended mainly for professionals already familiar with the topic: public health professionals, education professionals, researchers, and health authorities. Hence, the brief opening chapter focuses immediately on the progress that could be made to bring France’s rates of mortality and morbidity in line with those of other countries of northern Europe.

The book outlines tools for professionals working in injury prevention. Following a few short chapters examining the main principles of injury prevention (chapter 2), sources of data (chapter 3), and the extent of mortality and morbidity due to childhood injuries in France (chapter 4), two main chapters explore the organisation of prevention in France (structures) (chapter 5), and prevention methods (activities) (chapter 6).

The authors use a creative approach to introduce the structures. They describe the many organisations whose duties include childhood injury prevention in a broad sense, at the national, regional, subregional, or local level: their nature, goals, and types of action. The chapter ends with three highly original flowcharts that establish both the official and collaborative relationships among these organisations:

- Organisation of childhood injury prevention on the national level.

Another section intended to assist public health professionals in their work is a list of the names and titles of people with whom the authors met to collect the material required to write this chapter. Newcomers to the field in France can use this information as a reference tool.

The second main chapter (chapter 6), which deals with methods of prevention, is divided into two sections: the first on the laws, regulations, and standards, and the second on education and information. The text of the principal laws and regulations cited in the chapter are included in an Appendix, adding to the practical appeal of this book for French professionals.

The last chapter presents a critical analysis of the situation in France; it resolutely lists the gaps, and highlights the real possibilities for action. The book is clearly written, and reveals the author’s acute understanding of current scientific knowledge.

Although the book is essentially designed for readers interested in the situation in France, several sections can be useful to any professional working in the field of injury prevention. For example, chapter 2 presents a summary of the main principles of injury prevention, and the section entitled Problèmes méthodologiques: fiabilité et limites des statistiques de mortalité exposes the limits of data on mortality, no matter which population is under study.

Finally, this book can serve as an example for other countries that have set childhood injury reduction targets.

Note. The word “accident” in the book’s title and as it used in the book itself does not translate the idea of “unfoseeable event” that had led to the word being proscribed in English.

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A French language version of this review will be posted on the journal web site at http://www.injuryprevention.com