

Burn Injuries Prevention, Advocacy, and Legislation



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KEYWORDS

- Burn prevention • Advocacy • Legislative process • The Five-Step process • Five E's
- Collaboration

KEY POINTS

- It is crucial that the plastic surgeon, as the head of the prevention team, recognizes the influence such a position may hold in an effort to get the hospital administration to support fire and burn prevention initiatives.
- Every effort should be made to collaborate with community fire and life safety organizations to address the fire and burn issues.
- The goal of public education is to provide information that creates awareness that gets individuals to recognize and reduce their risks of sustaining a burn injury.
- The plastic surgeon should have a working knowledge of the legislative process to influence legislation that could reduce burn injuries.

INTRODUCTION

Each year, more than 486,000 individuals visit emergency departments to seek some form of medical treatment for a burn injury (National Hospital Ambulatory Medical Care Survey, 2011).¹ Additionally, more than 30,000 individuals are burned so significantly that they require admission to the 132 designated burn care facilities in the United States and Canada each year for the treatment of a burn injury (American Burn Association, 2016).² Most of these injuries are preventable. The plastic surgeon is in a unique position to help promote prevention initiatives. This article presents an historical perspective related to burn prevention and elements of successful burn prevention programs and explores ways in which the plastic surgeon can promote burn prevention through education, advocacy, and the legislative process. Because the best way to treat a burn is to prevent

it from occurring, prevention efforts undertaken by the surgeon can increase awareness, ensure a safe environment, and reduce burn injuries.

THE HISTORY OF BURN PREVENTION

Ever since humans first discovered fire, a burn injury probably occurred shortly thereafter. Numerous records exist that describes the treatment of burns dating from the times of cave dwellers to 1500 to 1600 BC.³ The first recorded burn injury in the United States occurred in 1609 to Captain John Smith of the Jamestown Colony. Records indicate that Smith was badly injured (burned) from a mysterious gunpowder explosion in October of that year. He returned to England for treatment and never set foot in Virginia again.⁴ Technologic advances and changes in cultural mores may have contributed to the increase in burn injuries, as little or no emphasis on safety

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was required for new products. It was not until the late 19th and mid-20th centuries that society began to recognize that most burn injuries could be prevented. It could easily be argued that the recognition for burn prevention came about because of published injury data reports and reaction to local, regional, or national disasters that resulted in injury or the loss of life. As a consequence of these incidents, legislation in the form of laws or codes and standards were enacted to prevent or minimize their reoccurrence. These regulatory measures, when adopted, help ensure the safety of the general public but may not necessarily be applicable to individuals or specific forms of burn injuries such as scalds and flames that may occur in the home environment. It is difficult to determine the success of such methods, but the steady decline in burn-related injuries over the ensuing years may be one way to measure its success. **Table 1** shows several major historical fire events in US history, their causes, and the resultant legislative changes enacted to promote public fire safety. Some of the significant fires of note were the following.

A fire at the Triangle Shirtwaist Company of New York was believed to have started in a rag bin on the evening of March 25, 1911. Hazardous working conditions, blocked exits, and poor communication played a role in the death of 147 workers. Codes enacted after this tragedy evolved into the National Fire Protection Association's (NFPA's) Life Safety Code 101. This code addressed the standardization of fire escape (exits) planning for factories, schools, department stores, and theaters.⁵

The Coconut Grove Nightclub fire occurred on November 28, 1942 in Boston, Massachusetts. Because of a lack of sprinklers, blocked and locked exits, and other fire code violations, 492 individuals lost their lives. Significant advancement in the treatment of burns (comprehensive treatment of inhalation injuries, fluid resuscitation, and the use of antibiotics) and public safety initiatives (revolving doors must also have swing doors, disaster planning, and no combustibles in places of assembly) occurred as a result of this fire.⁶⁻⁹

Two years later, on July 6, 1944, a fire occurred in the big tent of the Ringling Brother's Circus in Hartford, Connecticut. This fire was thought to have occurred as a result of arson, but waterproofing efforts applied to the tents (coating with a mixture of paraffin and gasoline) may have contributed to the death of 168 individuals (two-thirds were children). Furthermore, blocked exits and a panicked crowd that headed for exits in which they entered (instead of more accessible exits) created congestion and slowed egress

from the burning structure. New codes and standards initiated after this fire addressed the construction, location, protection, and maintenance of grandstands and bleachers. This code also affected seating facilities located in the open air or within enclosed or semienclosed structures such as tents, membrane structures, and stadium complexes.

The middle of the 20th century saw significant progress related to fire and burn prevention. For example, Congress passed the Flammable Fabrics Act in 1953. This act was designed to regulate the manufacture or sale of highly flammable clothing.¹⁰ Technology in the mid-1960s brought about the introduction of residential smoke alarms. Although considered to be expensive at the time of its introduction, smoke alarms served (and continue to present day) as early warning devices that alert consumers of a possible fire and permit early egress. In 1972, the independent federal regulatory agency known as the Consumer Products Safety Commission was founded by the Consumer Product Safety Act. In that law, Congress directed the Commission to "Protect the public against unreasonable risks of injury and deaths associated with consumer products."¹¹ Since its inception, the Commission has called for and removed many products that have proven to be dangerous to the public. Some products that may cause or have actually been related to a burn injury have been the focus of many such recalls. However, safety is not totally the responsibility of regulatory agencies or technologic advances. As the US and Canada become more culturally diverse, Fire and Life Safety professionals along with medical and public health officials recognize that everyone must work together to educate and ensure the safety of the general public.

FIRE AND BURN PREVENTION TODAY

Fire and burn prevention initiatives of the last half of the 20th century have tended to focus on specific topics or behaviors. Campaigns such as National Fire Prevention Week, National Burn Awareness Week, and The National Scald Prevention Campaign are a few examples of such initiatives. These campaigns have encouraged consumer knowledge and participation in the proper installation and maintenance of smoke alarms and the setting of hot water heater temperatures, creating a safe home environment, and the practice of home escape planning in the event of a fire. A unique feature of these campaigns is the collaboration and inclusion of fire and life safety professionals. For example, fire fighters may canvass a targeted high-risk residential area to

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