

**SAFE
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FOUNDATION

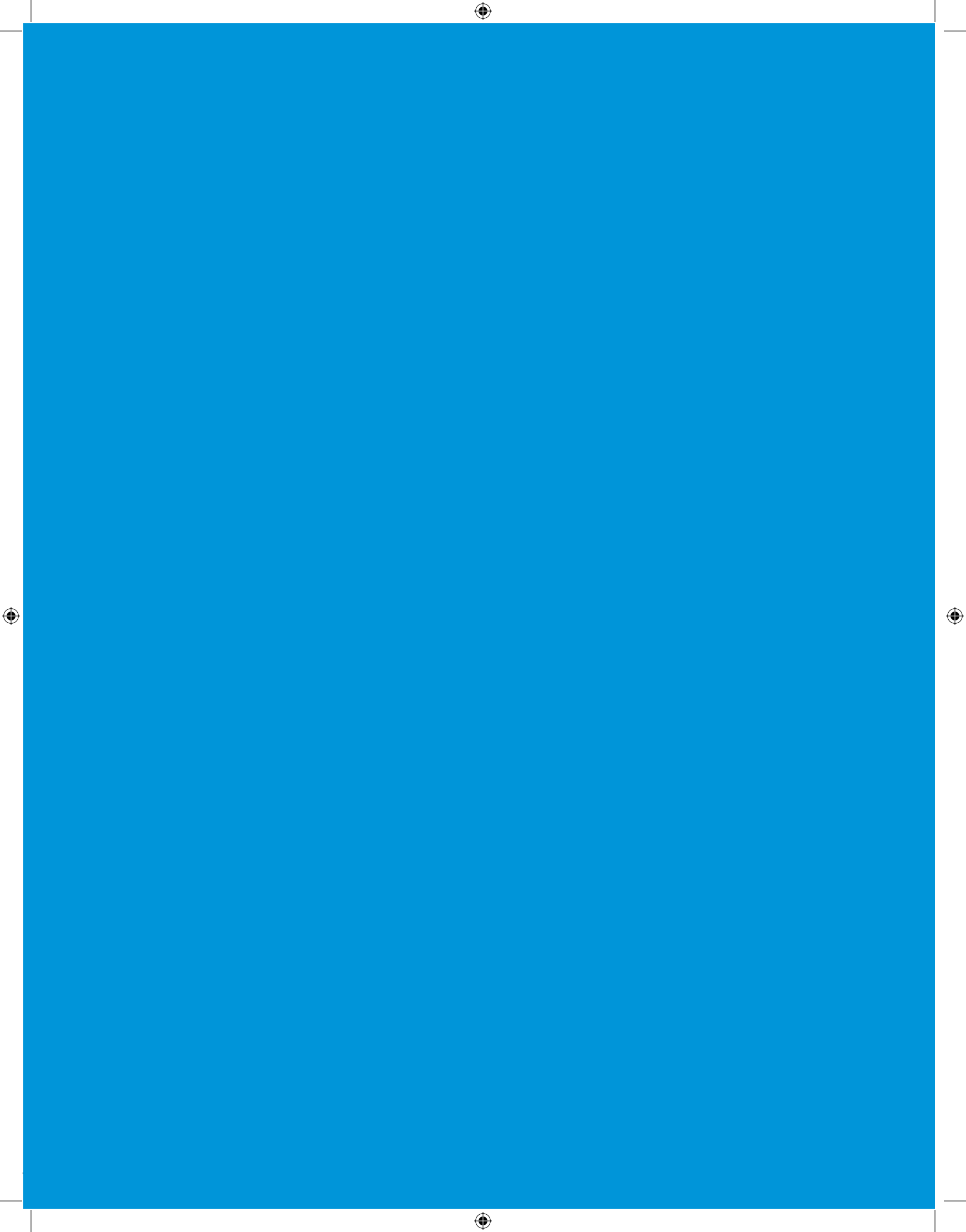
HOW SAFE IS YOUR HOME?

Protecting Children from Fire and Burns in Pune

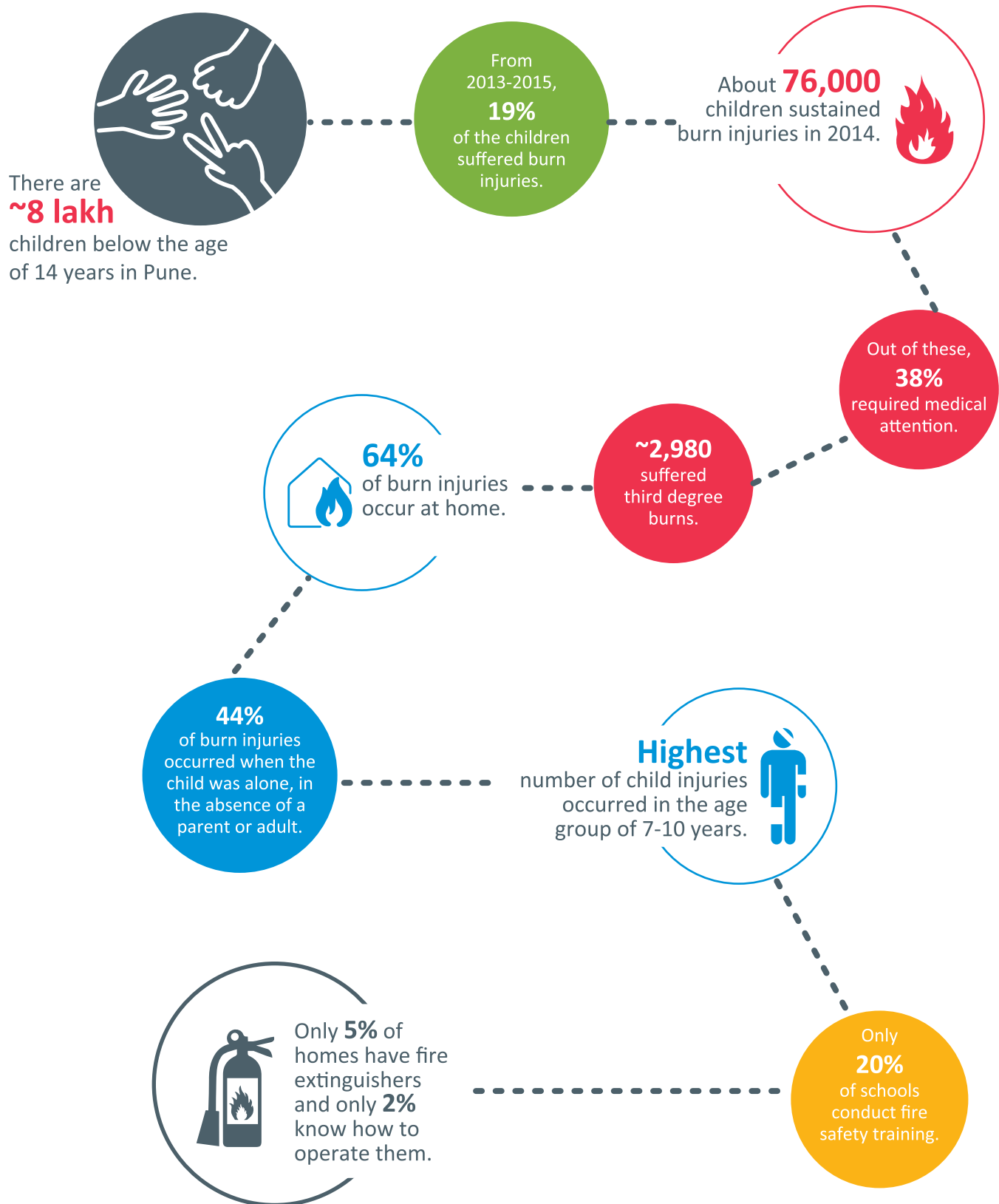
October 2015

Preventing accidental injuries
to children in India





Fire and Burn Injuries in Pune –Key Facts



Executive Summary

Losing a child can be the most painful experience for a parent, especially if it is because of incidences that could have been avoided. With increasing modernization in India, break up of joint families into nuclear families, and often with both parents working, children tend to receive less attention and are at a greater risk of injuries.

Children by nature are curious and they will fall, slip and tumble. It is part of growing up. It might surprise you to learn that around one million children die worldwide every year due to preventable injuries.¹ Leading causes of home injuries include falls, fire and burns, poisoning and drowning. Contrary to popular belief, many of these injuries occur at home, a place we consider safe for our children. However, there are little things we can all do to avoid the more serious injuries that can lead to disabilities or even death.

The Journal of Pediatrics states that, “unintentional injuries are an important cause of death in India. However, no reliable nationally representative estimates of unintentional injury deaths are available.”² Safe Kids Foundation India, with support from Honeywell India, undertook research conducted by IMRB International to understand preventable child injuries in Pune. The research surveyed 1,117 respondents, including parents, general practitioners, teachers and children under 14 years of age.

The key objective of the research was to assess the incidences of physical injuries among children below 14 years of age, and to develop suitable training programs for their prevention. Special emphasis was laid on understanding precautionary measures taken by parents and their response mechanisms to various burn and scald injuries. The methodology adopted also ensured that adequate representation was obtained from individuals residing in lesser affluent residence types such as chawls and slums.

The research report presents comprehensive details on the major causes of such injuries, number of visits to general physicians, what worries parents the most, leading causes of burn and scald injuries at home, what parents do to ensure the safety of their children and the need for creating awareness.

The research reveals that burns and scalds are the second leading cause of injury that occur among children under 14 years of age in the home, and the cause for the most concern among parents. Burns and scalds can be very damaging to a child as they may lead to lifelong disabilities. It is estimated that 76,000 children under the age of 14 suffered burn or scald injuries in the last one year in Pune. Of these, 38% required medical attention and an estimated 2,980 suffered third degree burns. It is alarming to note that most of these injuries, 64%, occurred at home. The research also reveals that about 44% of these injuries occurred when the child was alone at home. Notably, the highest number of injuries were reported among children 7-10 years of age, where supervision lessens and children start to do things on their own at home. It is crucial, therefore, that children be taught about the various causes of these preventable injuries and the most appropriate responses in case of injuries due to fire and burn. Clearly, a significant number of incidences can be easily avoided by creating awareness and changing behaviour.

When parents were asked what worries them the most about child injury, they reported injuries due to electric shock, and burns and scalds were the most concerning. Among general practitioners, injuries from cooking and lighting firecrackers are the most concerning and are among the most hazardous.

While it must be pointed out that parents express significant awareness towards safety precautions like switching off liquefied petroleum gas (LPG) cylinders after cooking and keeping electrical appliances away from children, there is still a need to create a greater awareness among families. General practitioners have also noted that if such vigilance can be exercised while cooking or lighting firecrackers, the instances of fire and burn injuries can be significantly reduced.

While analysing existing prevention and safety trainings provided in schools, it was found that only 20% of schools conduct such exercises as a part of their education. Hence, the research report presses the need for creating awareness in schools.

Ensuring a child’s safety is a priority for every parent. Parents want their children to be healthy, happy and safe. They want their children to grow up and lead a healthy life. By bringing awareness to preventable injuries and partnering with key stakeholders, civic agencies, educators and parents, we can create safer homes in Pune for our children.

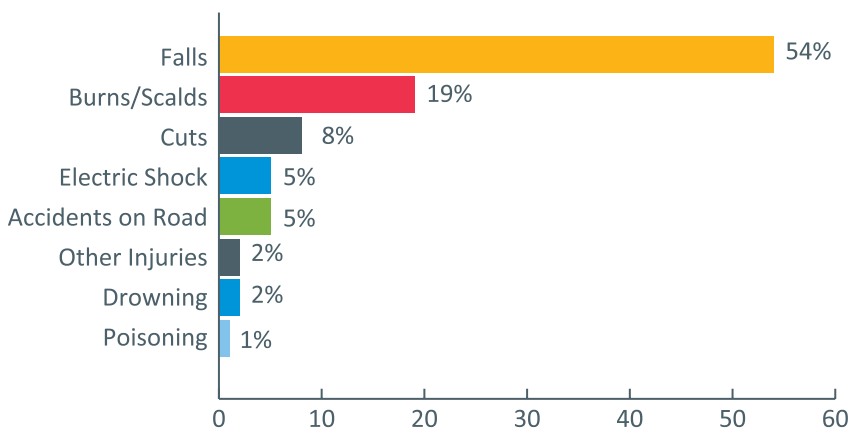
Preventable Child Injuries in the Home

What Parents Told Us

According to the World Health Organization (WHO), injuries are a leading cause of death and disability in the world and account for more than five million deaths each year among all ages. More than 100 children die every hour because of injuries. Unintentional injuries account for almost 90% of these cases.³ In the United States, a child dies nearly every hour from a preventable injury.⁴ Leading causes of home injury include falls, fire and burns, poisoning and drowning. These injuries can occur in different circumstances with different intensity, and need our special attention.

When we asked parents in Pune about the injuries that their children have suffered, they reported that 54% injuries were caused due to falls, 19% due to burns or scalds and 8% due to cuts (Figure 1). These injuries comprised the top three preventable injuries to children.

Figure 1: Which of these injuries did your child face in the last two years?



When we asked parents about the nature of visits they have made to doctors regarding child injuries in the last two years, the findings revealed that on average, visits to the doctors include burns or scalds (61%), accidents (57%), cuts (51%), falls (38%), and electric shocks (30%) (Figure 2).

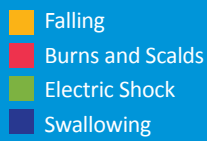
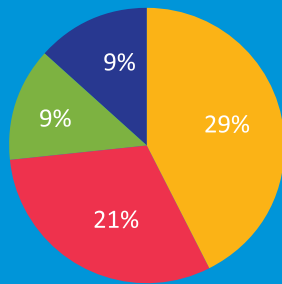
Parents reported that burns to children are 19% of all injuries, however they reported that the number of visits made to the doctor due to burns and scalds are 61% of all causes of injury. This reflects the seriousness of such injuries, and a need for adequate attention so that such severe and painful cases can be prevented.

While the nature and severity of such injuries may be unknown within the context of this report, considerable damage may be caused to the life of a child. Unintentional injuries that are completely preventable can also become a major issue that affects a child's social development, education and ability to work.⁵

We surveyed 1,117 respondents, including parents, general practitioners, teachers and children under 14 years of age to understand the number of preventable injuries at home.



Physical injuries among children: visits to general practitioners

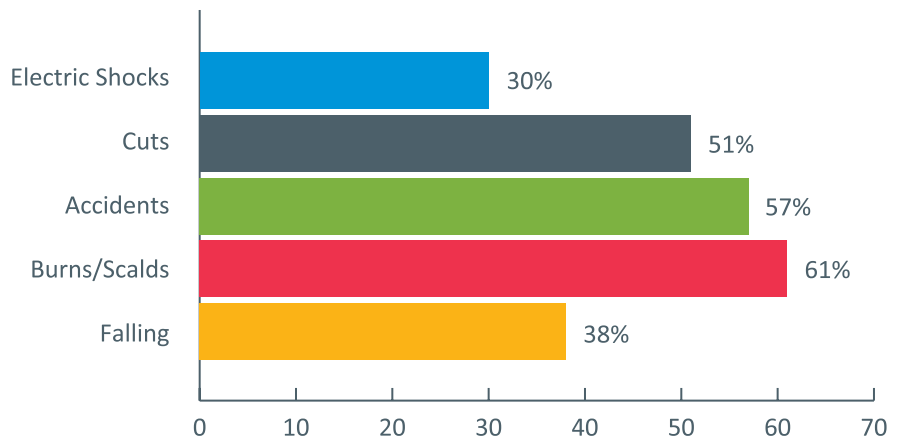


How safe is your child at home?

64% of injuries related to fire and burn happen in the home.



Figure 2: Was there a requirement to go to a doctor for each of these particular injuries that occurred to your child in the last two years?



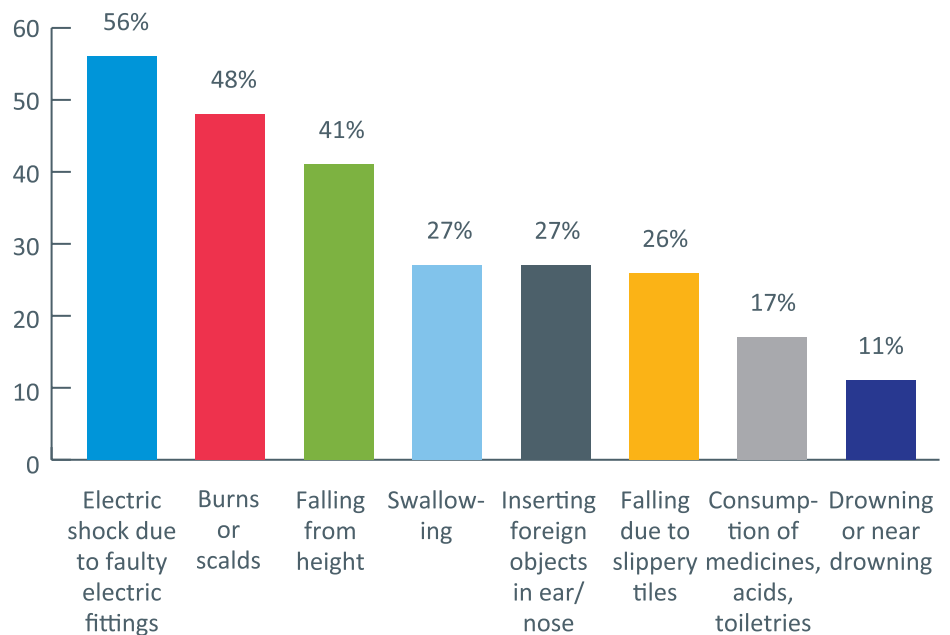
What Parents Worry About the Most

Parents tend to worry about their children when they are out of their sight. However, little do they know that many unintentional injuries occur at home, a place that is considered safe for children.

We asked parents about the injury risks a child may be exposed to at home and what worries them the most.

The topmost worries among surveyed parents are electric shocks due to faulty wiring (56%), followed by burns and scalds (48%). Other major concerns were falling from a height (41%), swallowing of inappropriate objects (27%), falling due to slippery tiles (36%), poisoning or consumption of medicines and household chemicals (17%) and drowning or near drowning (11%) (Figure 3). Clearly, a significant amount of attention needs to be paid toward these possible danger areas that pose a threat to a child's safety at home.

Figure 3: Please rank the dangers/fears/concerns/worries with respect to your child that you think are most likely to translate into an injury.

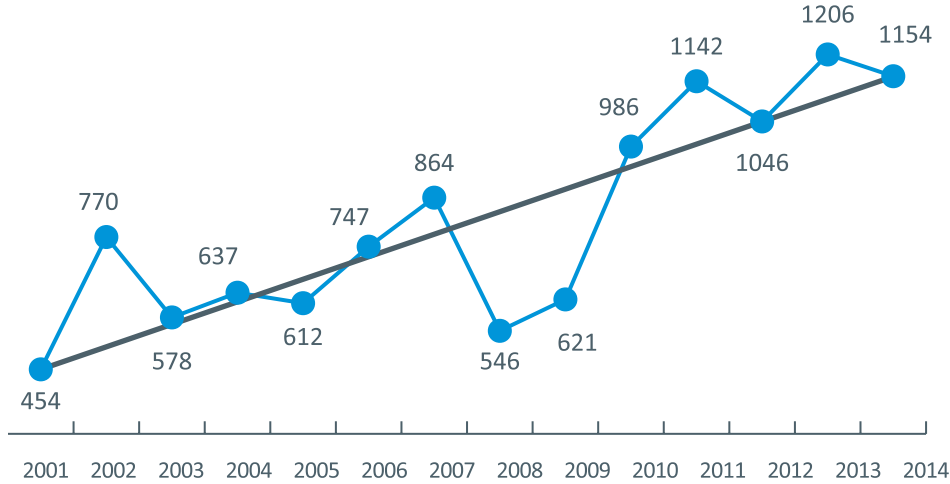


Injuries caused by electric shock and burns/scalds can be severe in nature and can be debilitating. The immediate effect of such injuries is compounded by physical disfigurement and impairment, along with emotional and psychological trauma, both for the child and the parents and caregivers. This is reflected as the topmost concern and worry of the parents.

Leading Causes of Burn and Scald Injuries at Home

Fires and burns are a leading cause of injuries related to death. According to the World Health Organization (WHO), every year all over the world, more than 3,00,000 people die from injuries due to fire alone⁶ and globally nearly 96,000 children under the age of 20 were estimated to be fatally injured as a result of fire-related burns in 2004.⁷ In Pune alone, the proportion of fire incidents as a fraction of the population has doubled from 0.02% in 2001 to 0.04% in 2014, as reported by the Pune Fire Department.

Figure 4: Fire Incidents in Pune



These however, are only based on the reported cases; there are several other instances of fires and burns that go unreported within the city. While not necessarily fatal in each case, burn injuries often take a long time to heal and are either not entirely reversible or extremely expensive to treat.

According to the research results, we concluded that the top causes of burns and scalds can be categorized into injuries due to electrical appliances, injuries due to firecrackers and injuries related to cooking. The cases include touching hot utensils (6%), spilling of hot beverages (5%), firecrackers (4%), touching hot geysers or hot geyser water (3%), burns while cooking (3%), and touching hot irons (2%) (Figure 5).

General physicians describe playing with firecrackers and drinking hot liquids as the top hazards for burn and scald injuries.



The Indian Journal of Burns reports that during the three-year research in Victoria Hospital, BMCRI, Bengaluru, India, 900 children were admitted in the burns ward with 280 (31.1%) girls and 620 boys (68.9%). The peak age of occurrence was between 1 and 4 years (44.7%).

The peak period of occurrence is between August and October (41.5%).⁸

This is generally the time period when most festivals are celebrated in India and bursting of firecrackers is a common practice.

Figure 5: What was the main cause of burn and scald injuries that your child sustained at home?

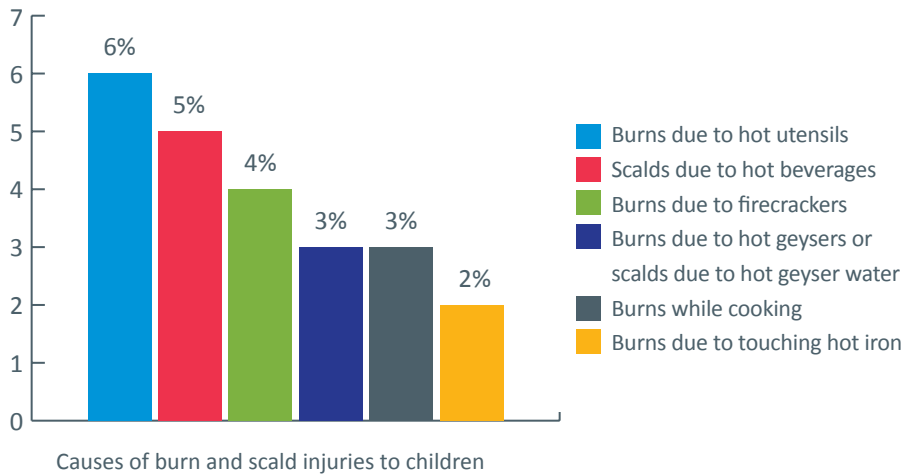
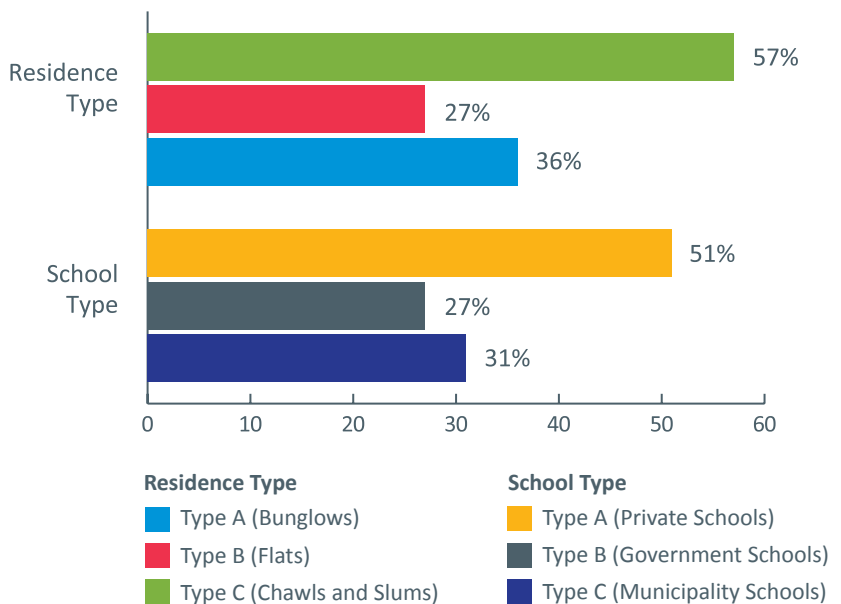


Figure 6: Number of injuries faced by children as per residence and school type.



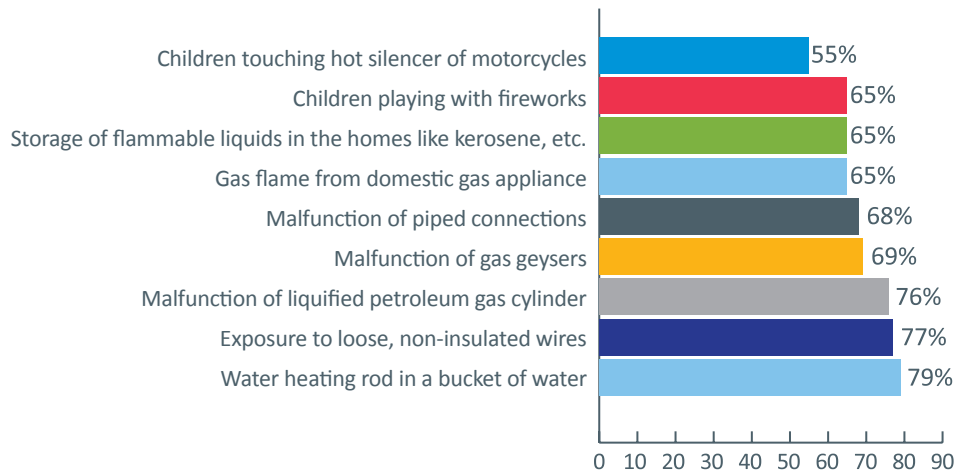
When we asked children about the leading causes of burn and scald injuries, we found injuries were particularly high (57%) among children from Type C residences (primarily chawls and slums). Injuries due to cooking were most common and may be due to undefined kitchen spaces or ground level cooking in such residence types.

While analysing data by school types, we learned that 51% of burn injuries at home occur to children who go to municipal schools or children who dwell in Type C residences. Since this segment accounts for a large percentage of injuries to children, increasing awareness and education in schools to reach children and their families will increase knowledge about how to prevent fire and burns.

Top Hazards of Burn and Scald Injuries

When we asked parents in Pune about what they thought were the top hazards for burn injuries in their homes, they reported injuries associated with electric shock caused by a water heating rod in a bucket of water (79%) and exposure to loose or non-insulated wires (77%). Malfunction of LPG cylinders (76%) is the next topmost hazard (Figure 7).

Figure 7: In your opinion, which are the leading fire/ burn/ scald hazards which children are exposed to at home and are most likely to translate into an injury?



Interestingly, injuries due to electric shocks fall quite low in the list of preventable injuries to children at home. Comparatively, from the point of view of general physicians, children playing with fireworks and drinking hot liquids are the top burn hazards that children face, which need to be carefully monitored. Notably, burn injuries due to touching motorcycle silencers have also been rated high in terms of severity by general physicians.



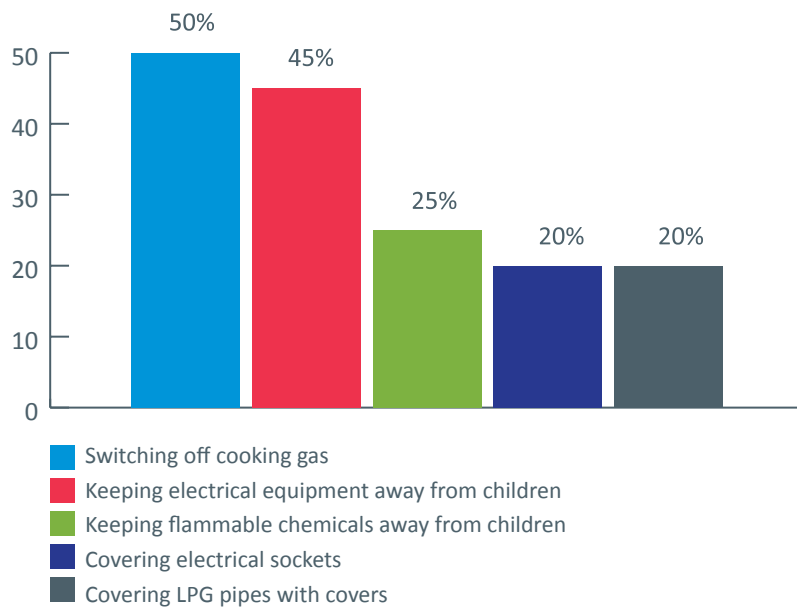


What Parents Do to Ensure Child Safety

Children are often overwhelmed with curiosity. From reaching for objects on high platforms to poking into electric sockets, they want to try everything, not knowing what can harm them. As parents, we can take certain precautions so that children can continue to learn, explore and grow in a safe environment.

When parents in Pune were asked what precautionary measures they take for the safety of their children, 50% of the parents said that switching off gas knobs is a top priority for them. Many parents (45%) also mentioned that all electrical appliances such as water heating rods and irons are kept out of children's reach. Apart from these, keeping chemicals away from children (25%), covering unused electrical sockets (20%), and covering LPG pipes to prevent leakage (20%) were also mentioned as top precautions taken by parents.

Figure 8: What are the precautions/ steps that you take to ensure the safety of the children at home from injuries caused from fire and burn hazards?



We also asked parents about the top safe behaviours they practised at home. About 45% of them believed that keeping firecrackers away from open flames and ensuring LPG cylinders are switched off (45%) are the most effective ways to prevent fire and burns.

From 2013 to 2015,
44% children
surveyed in Pune said
that burn injuries
occurred when they
were alone at home.

First Aid for Minor Burns

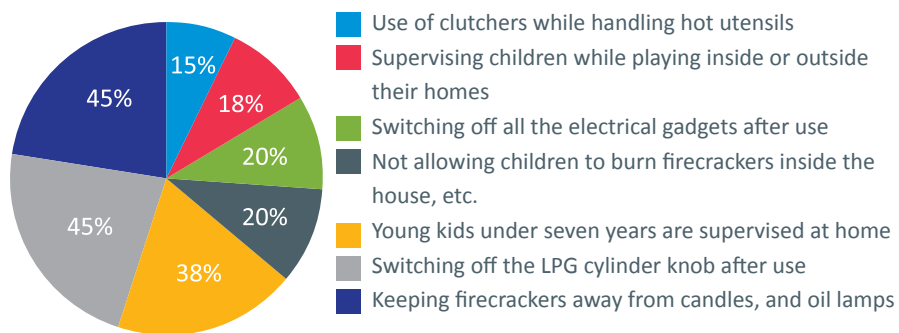
- Cool the affected area immediately with running water for at least 10 minutes.
- Do not pour ice-cold water or apply ice on the burn area.
- Do not apply products such as ointments or home remedies in case of severe burn. Talk to a physician first.
- Call a physician or 108 for Ambulance Service if you have suffered a severe burn.

Only 20% of schools include fire prevention and safety education as a part of their curriculum.



A clear need is felt to bridge the gap between cases of preventable injuries related to fire and burn, and training provided to children for prevention and safety against them.

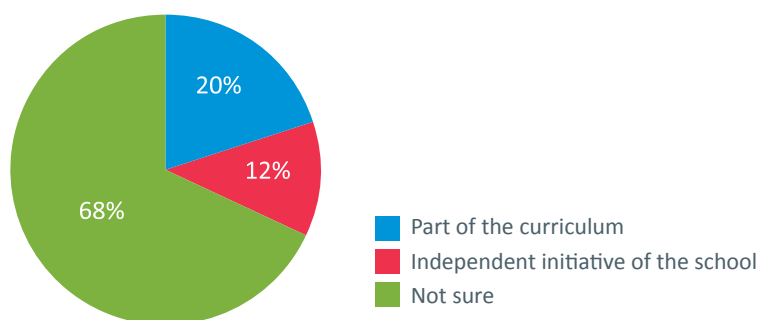
Figure 9: What do you think can be some of the safe behaviour that parents can exhibit for the safety of their own children?



Fire Safety Education in Schools

Forty-four percent of injuries took place when the child was alone at home, which may indicate lack of adequate fire safety knowledge. The research reveals that only 20% of schools currently provide education on fire prevention and safety as part of the curriculum. Around 12% of the schools provided fire safety as an independent initiative to students. Independent initiatives are commonly observed among government schools like Kendriya Vidyalaya and, to an extent, in some municipality schools (Figure 10). Thirty-nine percent of government schools reported that fire prevention and safety are included in school curriculum. This clearly indicates the need for fire safety education and an opportunity to reach children in the schools.

Figure 10: Do you formally teach students about fire safety and prevention in your school?



Our research conclusively shows that safety is a priority for parents; however, 64% of injuries still occur to children at home, and in 44% of the cases, the child was without any adult supervision. With appropriate education and awareness, we can reduce fire and burn injuries to children and help them grow in a safe and healthy environment. Collective efforts of all stakeholders, educators and parents will help in creating safer homes in Pune for our children.

MATHEMATICS

$$(a+b)^2 = a^2 + b^2 + 2ab$$

$$(a-b)^2 = a^2 + b^2 - 2ab$$

Solve the following problems

$$21b$$



Preventing Fires and Burns: Top Tips for Parents

Every risk has safety measures that are recommended by injury prevention experts, and they are important for both adults and children to learn and practise.

Cooking Safety

- Be attentive and alert while cooking. Unattended cooking could lead to a kitchen fire.
- Tuck in all loose ends of clothing and keep a safe distance from fire.
- Items such as towels, wooden spoons and food packages may catch fire. Move these items away from stoves and open flames.
- Keep matchsticks and lighters out of children's reach.
- Keep hot utensils away from children's reach as they may cause severe burn.
- Young children should keep a safe distance from the cooking area. Teach older children about cooking safely.

Preventing Burns and Scalds

- Children love to reach, so keep hot food and liquids away from the edge of counters and tables.
- It is not advisable to hold a child while cooking or handling hot liquids. It can cause a burn or scald to your infant.
- Check the temperature of hot water before bathing infants.
- Be careful to keep children away from a bucket of water which has a heating rod immersed in it.

Safety Around Electrical Appliances

- Be careful not to overload electric sockets as this may cause overheating and result in fire.
- Do not use electrical appliances with wet hands, in wet clothes or shoes.
- Unplug and safely store electrical appliances such as irons, toasters and water heating rods immediately after using them and out of children's reach.
- Ensure that electric wires do not run under rugs or carpets. Replace worn out or damaged wires immediately.

Safety Around Open Flames

- Keep burning candles, mosquito coils and oil lamps out of children's reach and away from furniture, curtains and other flammable items.
- Remember to blow out candles and turn off oil lamps before going to sleep.
- Ensure that cigarette butts are properly doused and disposed in an ashtray and not in the dustbin.

Firecracker Safety

- Wear fitted cotton clothes that do not catch fire easily when lighting firecrackers.
- Teach children to wait for an adult before lighting firecrackers.
- Use a long stick to light a firecracker. It is unsafe to light a firecracker in your hand.
- Keep a safe distance when lighting firecrackers and light them at an arm's length.
- It is not safe to relight a firecracker that did not ignite the first time.
- Keep a bucket of sand or water nearby when lighting firecrackers in case there is a fire.
- Find an open area away from trees and homes before lighting a firecracker. Do not light firecrackers inside the house.

Safety in a Fire Emergency

- Create and practise a fire escape plan with your family and identify a safe meeting place outside the home.
- If there is a fire, exit the house immediately.
- If there is a lot of smoke and it is difficult to see, get low and crawl out of the house as quickly as possible.
- Know the emergency contact numbers of the fire brigade (101) and ambulance (108) in Pune.

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