

# A Feasibility Survey on Mortality due to Home and Leisure Injuries Among Children under 15 years in France: MI15

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Safety 2010 World Conference, September 2010, London

Thursday 23 September, Role of parents in child injury prevention



# Introduction and Background

## **Fatal home and leisure injuries (HLI) in children are still high:**

- First cause of deaths of people under 15 years of age.
- 2.4 deaths per 100,000 children: 6.3 % of the total mortality of children;
- 266 deaths in 2006 in France (63 millions inhabitants) / 5 per week
- 30 % drowning, 18 % suffocation, 14 % fire, 12 % falls, 6 % poisoning.
- Boys are more often victims than girls: sex-ratio = 2.0 (178 versus 88).

## **Vulnerability of children, several risk factors interact:**

- Age, sex, children's families and social environment, and dangerous products.

# Main Objective of MI15

Detailed description of deaths by injuries  
is not available from death certificates



Acquiring a better knowledge on circumstances and risk factors of HLI having led to death among children



# Method of Survey

## Inclusion of cases

All deaths by HLI, including injuries by cycle and injuries with indeterminate intention, among children under 15:

- From 1 January to 31 December 2009
- In 3 administrative areas, representing around 32 % of the French population

## Exclusion of cases

- Suicides and homicides
- Road traffic injuries (except by cycle)
- Occupational injuries (trainees, apprentices, etc.)



# Information Collected

- Deaths were identified through the death certificates, with the help of social services, medical doctors, firemen and press reviews.
- Contact with the medical certifier
- A questionnaire was sent to medical certifiers including questions about:
  - the characteristics of the injury: product involved, activity, place, mechanism,
  - the demographic and socioeconomic profile of victim.



# Results of MI15

*76 children's deaths by HLI were identified  
from 1 January to 31 December 2009  
in the 3 administrative areas of survey.*

1. General results
2. Detailed circumstances of injuries

# General Results (1/3)

Table 1. Age brackets of dead children by HLI

Age brackets	Numbers	%
< 1	8	10.5
1-4	37	48.7
5-9	11	14.5
10-14	11	14.5
Missing	9	11.8
<b>Total</b>	<b>76</b>	<b>100</b>

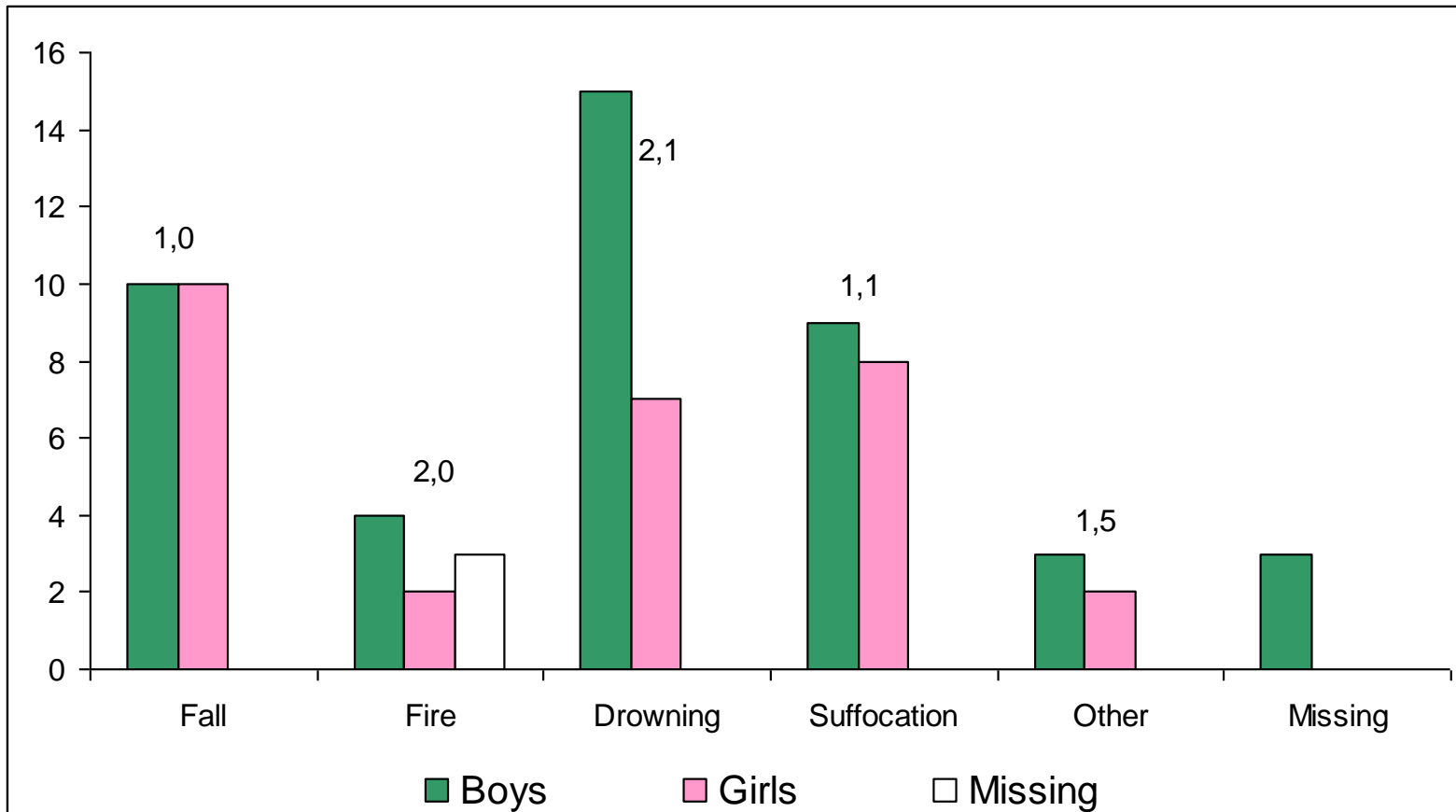
Table 2. Types of injuries

Types of injuries	Numbers	%
Drowning	22	28.9
Fall	20	26.3
Suffocation	17	22.3
Fire	9	11.8
Others	5	6.6
Missing	3	3.9
<b>Total</b>	<b>76</b>	<b>100</b>

*These results are consistent with the national results*

# General Results (2/3)

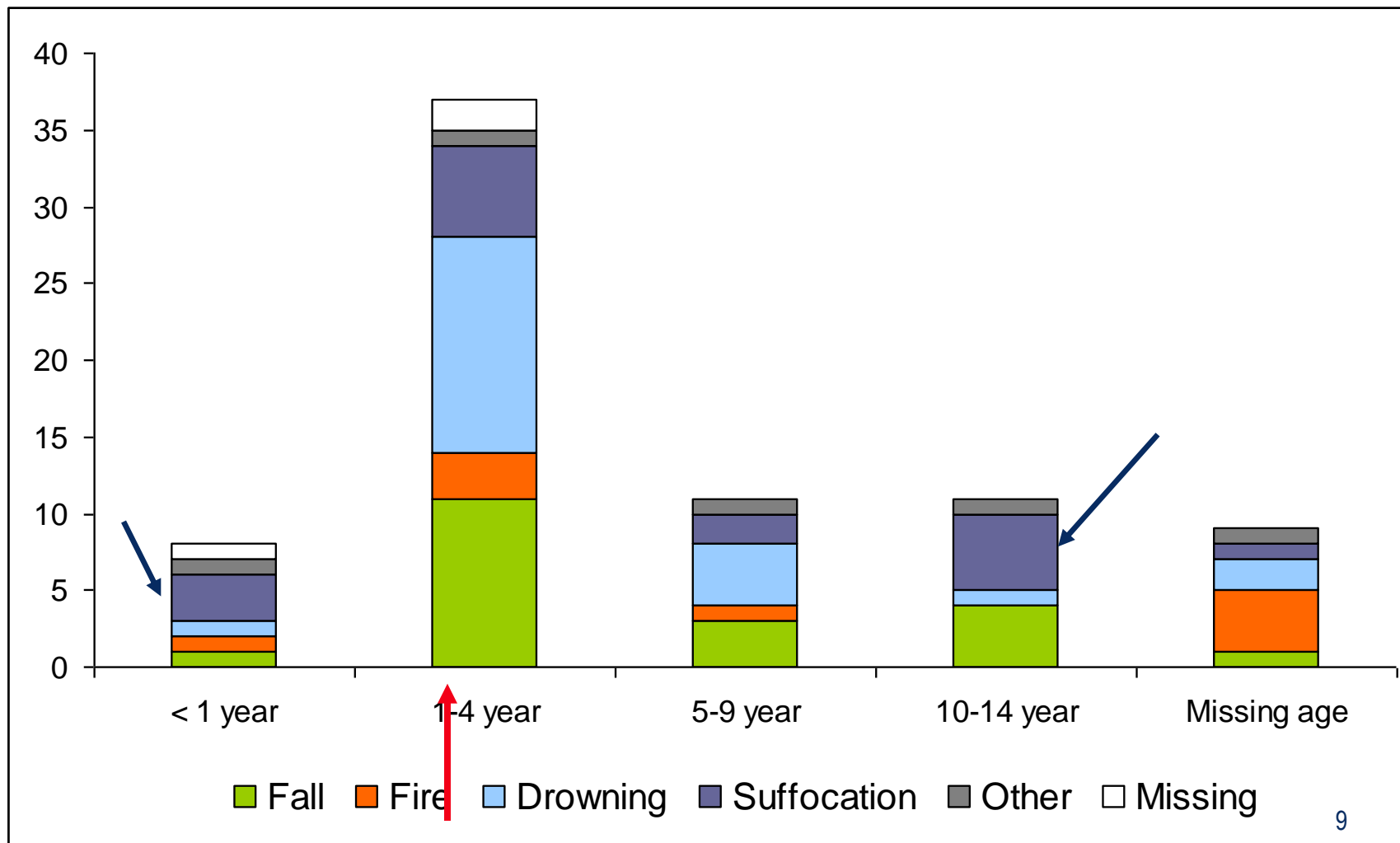
Figure 1. Sex-ratio by type of HLI



**Sex-ratio: 1.5 (44 boys versus 29 girls)**

# General Results (3/3)

Figure 2. Distribution by type and age



# Specifics Results:

Detailed circumstances of injuries having led to death (1/3)

Example 1:

- **Death certificate** mentioned “unintentional drowning in a bathtub.”
- **MI15** mentioned:

“A nine-month-old child installed in a steady seat for bathtub. Left alone in the bathtub with water during 15 minutes, attended closely by his brother (16 years-old, with a heavy handicap not allowing him to help his brother). Parents were downstairs and drunk. The child was found by one parent floating on his stomach in the bathtub.”

→ ***lack of surveillance by adult +++/age of the child***

# Specifics Results:

Detailed circumstances of injuries having led to death (2/3)

Example 2:

- **Death certificate** mentioned “ respiratory failure, inhalation and ingestion of food causing obstruction of respiratory tract, cerebral anoxia.”
- **MI15** mentioned :

“ The baby was found by his mother in a state of cardiac respiratory failure amid his vomit. The mother had just given to him to eat, in a bouncer-chair put on the table (parents living in a small caravan). The mother left the caravan for a few minutes, when she came back, the bouncer-chair had toppled on the floor and turned to one end. The baby was attached, he was clamped on the stomach and cyanotic. The mother tried to resuscitate the baby, while waiting for emergency services. The baby arrived at the intensive care unit of the hospital in a state of cerebral death. ”

→ ***lack of surveillance/age of the child/socioeco conditions***<sup>11</sup>

# Specifics Results:

Detailed circumstances of injuries having led to death (3/3)

## Example 3:

- **Death certificate** mentioned “ Inhalation of objects, asphyxia, CPA (cardiopulmonary arrest). “
- **MI15** mentioned:  
“ One year old child, inhalation of objects (knob of toothbrush). The child was playing with a toothbrush which handle was hard, smooth and pear-shaped. The child had broken the toothbrush, and put the handle in his mouth, then he fell on his face. The handle got stuck in the back of the throat, leading to an obstruction respiratory tract. ”

→ *dangerous product+++*

# Confirmation of the Role of Several Risk Factors

- **Age/behavior:**

In young children, the lack of surveillance by parents is the main origin of HLI

In older children, the behavior is more often involved.

- **Ignorance/negligence:** The risks of injury are sometimes insufficiently known or neglected by adults.

- **Dangerous/misused products:** Some deaths occurred mainly due to dangerous products or misuse of products by young children.



# Discussion

- The data produced by MI15 reveals original information which completes the knowledge of the HLI in children.
- This information can be directly used to improve regulations on certain products to prevent injuries  
*(example: toothbrush)*

# Perspectives

- **To set up systematic data collection on circumstances of HLI deaths?** The method of collection has to be discussed:
  - exhaustive and permanent collection?
  - or
  - periodic collection and/or on a limited area.
- **Make sure that the results are disseminated to the appropriate prevention and regulations institutions:**
  - The French National Institute for Prevention (*INPES*)
  - The authorities in charge of regulations (*DGCCRF*)
  - The Consumer Safety Commission (CSC), the Institution in charge of giving safety advice to consumers



# Thank You

- More information on: <http://www.invs.sante.fr>
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