

Deaths related to uncorrected use of chainsaws in working activity, gardening and other hobby

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Introduction

Each year in Italy approximately 300.000 chainsaws are sold. This instrument is used in variety of activities both in workplace (farming, gardening, forestry, building) and hobby, representing moreover a high risk of accidents. Currently there are no databases that analyse extensively serious and fatal accidents connected with the use of chainsaws.

Therefore the aim of this work was to create a database of events related to the phases of gardening or cutting down trees and limbs, then link the obtained data with the cases analysed by the Section of Legal Medicine of the University of Udine in order to identify the main causes of death and the pattern of lesions that occurs more frequently in this kind of activity.

Materials and methods

The methodology involved two distinct steps:

step 1 – create a comprehensive database involving 9 years (636 cases, excluding suicides and the use of chainsaw as a weapon). Since there are no exhaustive sources of data, in this phase we used web sources to collect those cases and analyse 7 main parameters that allowed to assess risk scenarios and main manners of injury/death;

step 2 – correlate data collected in step 1 with the cases analysed by the Section of Legal Medicine of the University of Udine and highlight:

- types of lesion that led to death;
- causal relation between work and lesion/death;
- mistakes or incorrect work phases that led to the event.

Results

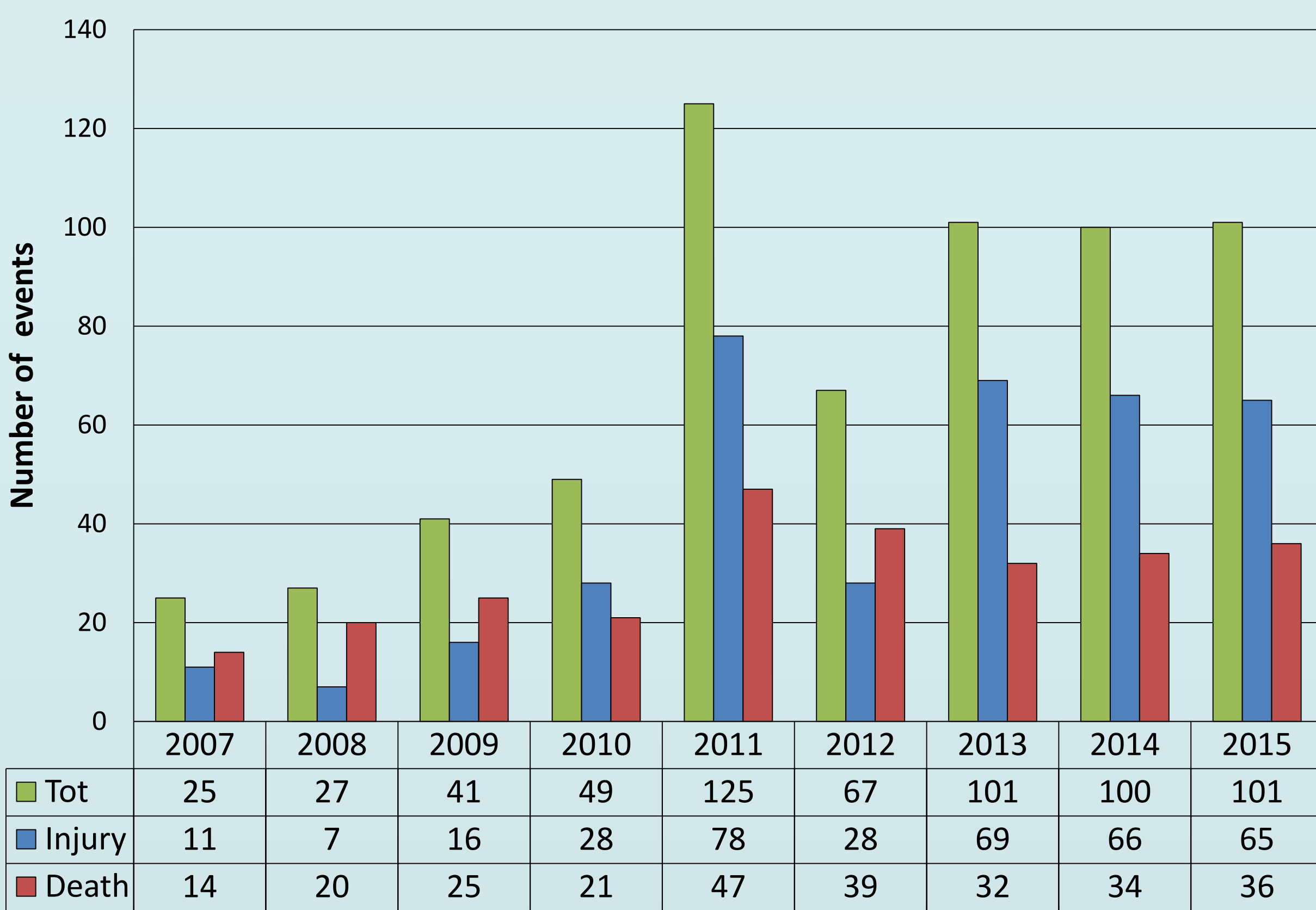


Table 1 – Total events per year, subdivided into injuries and deaths.

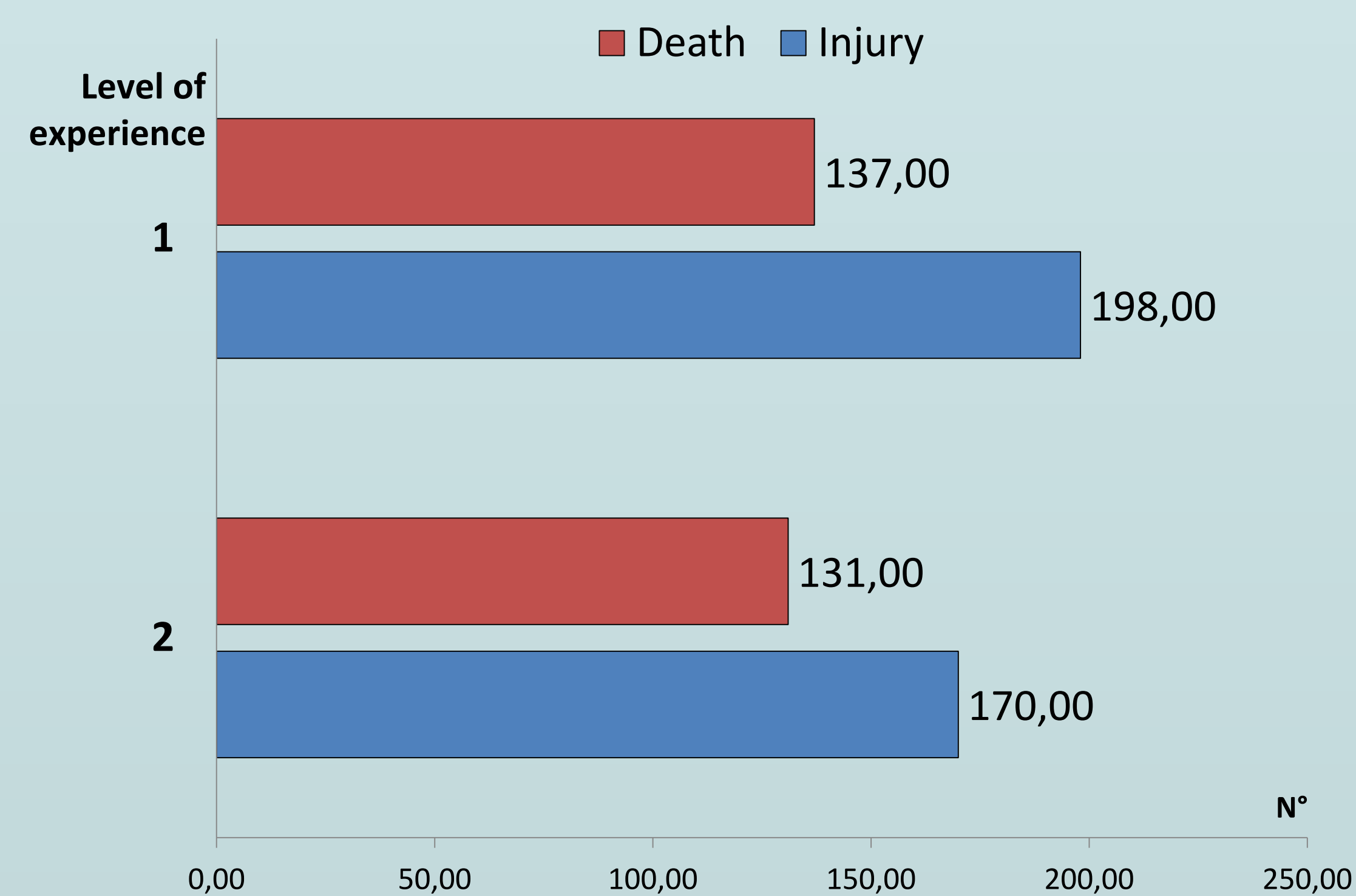


Table 2 – Number of deaths and injuries divided according to the experience of the worker (1= non professional worker - 2= professional worker).

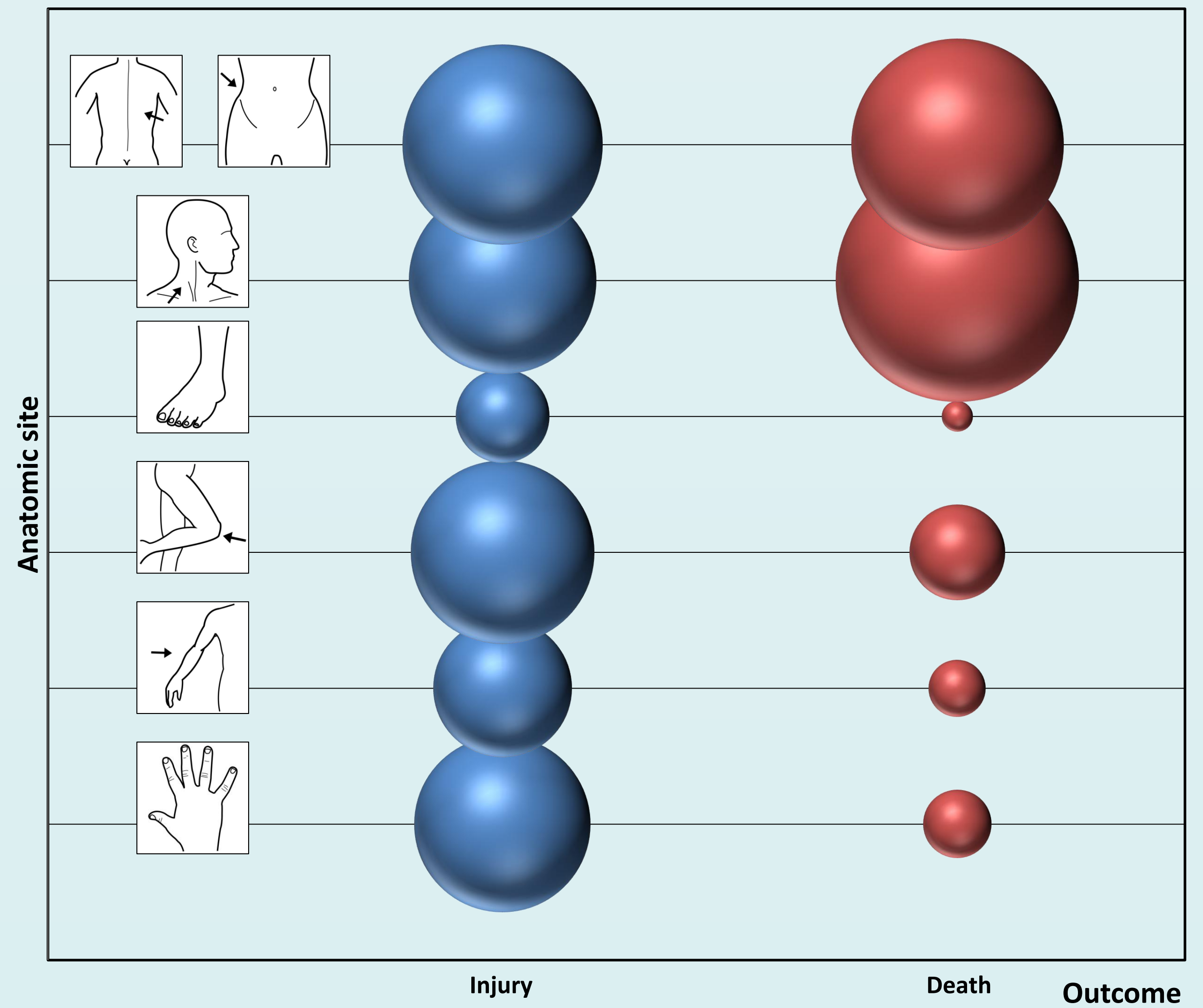


Table 3 – The location of the lesions related with the final outcome of the event (1= Injury; 2= Death).

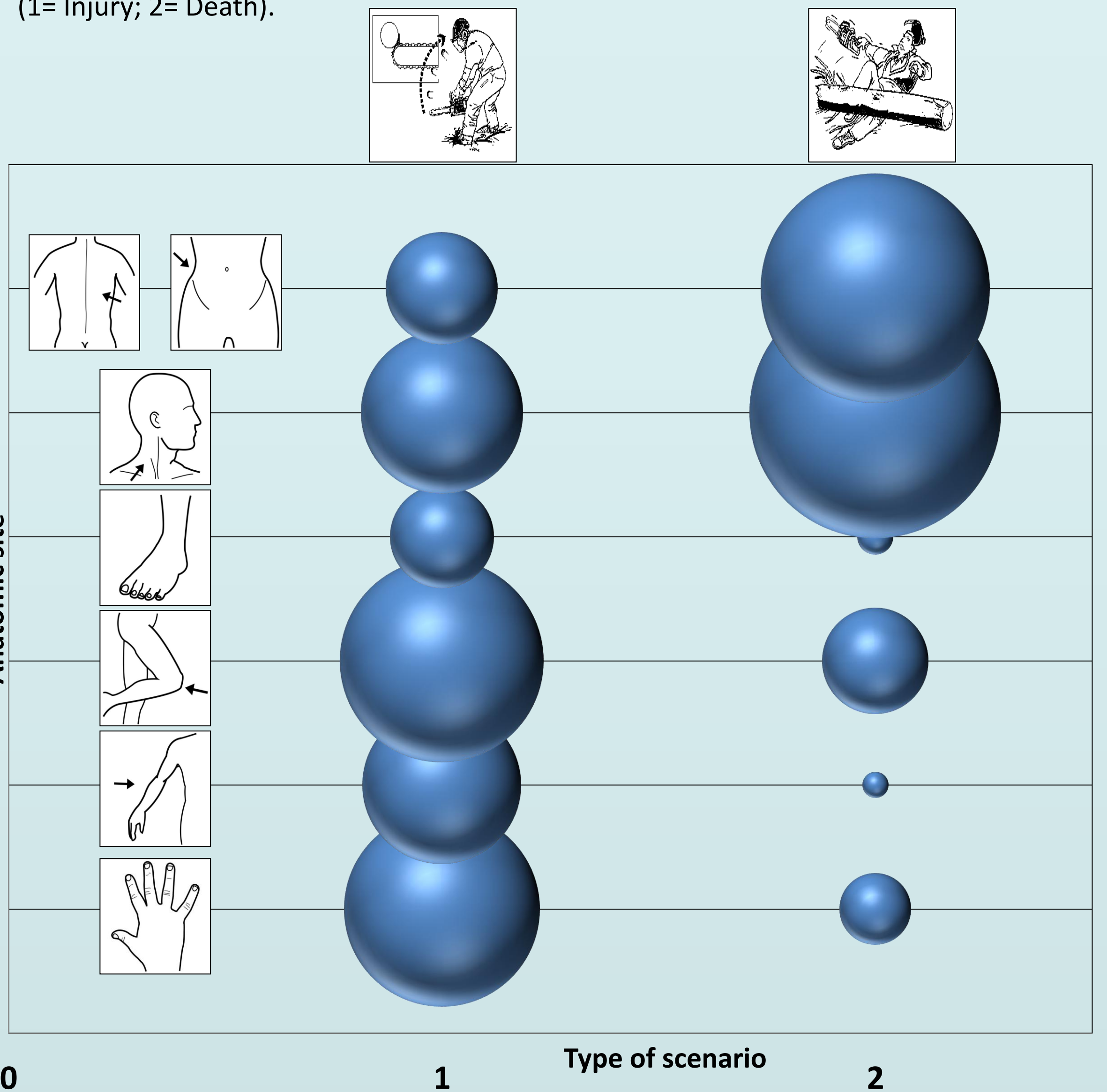


Table 4 – Total injuries analysed according to the dynamic of the event (1 = hit by chainsaw; 2 = hit by trunk or other moving means) and anatomical site involved.

Conclusions

The results demonstrate two main scenarios in which the operator may be involved.

In the first one the operator is crushed by the trunk in the stages of demolition with predominant fatal outcome, primarily due to skull fracture or crushing of the thorax with consequent asphyxiation (Fig. 1).

In the second one the worker is injured by moving parts of the chainsaw with predominantly non-fatal consequences, typically consisting in wounds to limbs or other body regions (Fig. 2).



Fig. 1 – Ecchymotic mask



Fig. 2 – Permanent lesion caused by a chainsaw