Ann Ig 2021; 33(2): 152-162 doi:10.7416/ai.2021.2421

Home accidents in the province of Trento. Ten years of observations regarding admissions to the emergency and first aid department

S. Piffer[1], S. Demonti[2], C. Ramponi[3], M. Giustini[4], A. Pitidis[4]

Key words: Home accidents, Epidemiology, Emergency Departments
Parole chiave: Incidenti domestici, Epidemiologia, Dipartimento di Emergenza

Abstract

Background. *Home accidents, or domestic accidents, are accidents that occur inside a home or the adjacent areas (stairways, courtyards, gardens, attics, cellars, garages, etc.). In Italy, they are monitored through a number of surveillance systems including the PASSI system and the ISTAT (Italian Institute of Statistics) Multipurpose Survey on Households. Only the SINIACA system (Italian National Information Service on Domestic Accidents), managed by the Istituto Superiore di Sanità (National Institute for Health), provides health-related information regarding such events and their circumstances and consequences, based primarily on Accident & Emergency Departments' data.*

Study design. *This is an observational study on the domestic accidents trends in the province of Trento, using data on Accident & Emergency Departments admissions, between 2009 and 2018, combined with mortality and hospital discharge data.*

Methods. *The authors extrapolated records regarding admissions for domestic accidents from the digital annual Accident & Emergency admissions archive. For the 2009-2018 period, they analysed: the trend over time, both overall and classified according to gender and age group; and the inflow rate/10,000 inhabitants, broken down according to gender, nationality (Italians and foreign nationals) and age group. The coverage of the additional SINIACA variables regarding the accident dynamic, contingent activity and place of the accident were also analysed. With regard to the case load for 2018, the authors analysed the site and type of the injuries, the level of severity, outcome and the services provided, comparing the 0-14 years and >65 years age groups. Trend significance was analysed using the Cochran-Armitage test for trend and the significance of the differences between the proportions was analysed using the Chi-squared test. We have also calculated the costs of the services provided, overall and by age group.*

Results. *During the study period, a total of 99,386 A&E admissions for domestic accidents were recorded, with an annual average of 9,938 admissions. Between 2009 and 2018, there was a statistically significant increase of 41%, which was due in part to better event recognition and recording. Females prevail over males, especially over the age of 75 years. Over time there is an increase in cases over the age of 65, due to the progressive ageing of the population. Considering the resident population alone, the A&E inflow rate rises from 147 admissions/10,000 inhabitants in 2009 to 197 admissions/10,000 inhabitants in 2018, with a 39.0% increase. Inflow is greater in the two extreme age groups: in 2018, in the 0-4 years age group, the inflow rate is 319 admissions/10,000 inhabitants and in the over 75 years class it rises to 481 admission/10,000*

[1] *Clinical and Evaluative Epidemiology Service, Health Services Center, Provincial Health Agency, Trento, Italy*
[2] *Data analysis and integration Service, Department of Technology, Health Services Center, Provincial Health Agency, Trento, Italy*
[3] *Emergency and First Aid Department, S. Chiara Hospital, Provincial Health Agency, Trento, Italy*
[4] *Environment and Trauma Department, National Institute of Health, Rome, Italy*

inhabitants, 1.6 and 2.4 times the mean inflow for home accidents in the province of Trento, respectively. Admissions are less amongst foreign nationals than amongst Italians. Generally speaking, the events were of a mild severity, with white triage codes accounting for 16% of cases and green triage codes for 73%. The degree of severity is higher amongst subjects aged over 65, as well as in women and Italian citizens.The level of recording of SINIACA variables increases over time, to reach 100% coverage in 2018. Falls are the most common dynamic in all age ranges; household chores, activities of daily living and DIY are the three most commonly observed activities. Home accidents most commonly occur in the areas adjacent to the home and the kitchen. In over 2/3 of cases, the injuries sustained were to the limbs and the head/face. Head/face injuries prevail in the youngest age group. Wounds, burns and head injuries are the most common types of injury sustained by children in the 0-14 years age group, whereas fractures and dislocations are typical of the older age groups. Diagnostic and care resource consumption is far higher amongst the elderly, which absorb 61% of the total costs of the cases treated in the year 2018.

Conclusions. *Accident & Emergency facilities provide a privileged observatory for the monitoring of domestic accidents in the population. By comparing our data with the ISTAT data, it can be estimated that 1 in 2 home accidents in the population resulted in an A&E admission. Admissions increase over time, particularly amongst the elderly and they are not higher amongst foreign nationals than amongst Italians. The inflow rate is higher in the extreme age ranges: 0-4 and >75 years; however, there are differences between the two in terms of type of injury, level of severity and outcome. It is essential for A&E admission data to be fully digitalised, and facility and staff sensitisation is also important in order to guarantee the availability of good-quality data. The completeness of A&E data and the possibility of obtaining case stratification based on social and demographic characteristics could make it possible, through a virtuous integration of services, to use these data for the implementation of prevention initiatives. These, if carried out effectively, could also contribute to contain healthcare costs.*

Introduction

Home accidents, or domestic accidents, constitute a public health problem that is as considerable as it is underestimated. They are defined as accidental events resulting in a temporary or permanent impairment of health that occur in the home, i.e. either inside the house or apartment itself or in the adjacent areas (stairways, courtyards, gardens, cellars, attics, garages, etc.) (1).

In Italy, they are monitored through a number of surveillance systems: the Passi system (2), the Passi d'argento system (3) and the ISTAT (Italian Institute of Statistics) Multipurpose Survey on Households (4).

In addition to these, the SINIACA system (Italian National Information Service on Domestic Accidents) managed by the Istituto Superiore di Sanità (National Institute for Health), provides health-related information regarding such events and their circumstances and consequences (5). The SINIACA system was established with Law no. 493 "*Rules for the protection of health in the home and the introduction of insurance against domestic accidents*" of 3 December 1999. This law imposed the need for the collection, at local level, of data regarding home accidents (c/o the regional Epidemiological Monitoring Centres) and the promotion of prevention schemes (performed by the Prevention Departments of the Local Health Authorities), and simultaneously established a form of insurance for accidents resulting from work performed within the home.

The SINIACA system is based primarily on data from Accident & Emergency Departments, combined with hospital discharge reports and death data. Its purpose is therefore to provide an overall description of home accidents and it is currently incorporated into the European Injury Database (6).

A domestic accidents monitoring system regarding the Accident & Emergency (A&E) facility inflow has been implemented in the Province of Trento, since 2000. In 2007, the

Autonomous Province of Trento appointed the Provincial Health Authority (APSS) to add 3 further variables to the data collected regarding A&E facility admissions resulting from home accidents, in order to allow the Province of Trento monitoring system to satisfy the minimum data set required by the SINIACA system; these variables were: *the dynamic of the accident, the activity that was being performed by the subject at the time of the accident and the place of occurrence.* Since 2008, all A&E facilities have been provided with the means to record the three additional SINIACA variables, for all admissions resulting from home accidents. The implementation of this data flow was accompanied, in 2007 and 2008, by briefing sessions held in each of the Province's 7 A&E facilities.

This paper describes A&E admissions for domestic accidents in the Province of Trento between 2009 and 2018, and analyses the trend over time, the case characteristics, the severity levels, the dynamics of the event and the types of injury sustained. An estimate of the costs of the services provided for the cases treated in the year 2018 is also presented.

Materials and methods

For some years now, all A&E activities performed in the province of Trento have been recorded in electronic databases. The data of the individual facilities are combined in one only Provincial Health Authority archive, which is made available through information services to a number of services and facilities, including the Clinical and Evaluational Epidemiology Service, for those activities within their various spheres of competence. The authors extrapolated records regarding admissions for home accidents (HA) from the annual Accident & Emergency admissions archive. For the 2009-2018 period, they analysed: the trend over time, both overall and broken down according to gender and age group; and the inflow rate /10,000 inhabitants, broken down according to gender, nationality (Italians and foreign nationals) and age group. They also analysed the coverage of the additional SINIACA variables regarding the dynamics of the event, the contingent activity and the place of the accident and, lastly, using the data for 2018 alone, the site, type, severity and outcome of the injuries sustained. In addition to the A&E data, the outcome assessment was also based on hospital discharge reports, by evaluating hospitalisations for which the external cause of injury criterion was "2" (domestic accident) and the discharge criterion was "1" (death).

We used the 2018 A&E data for analyzing the association of socio-demographic factors (age, gender and nationality) with the triage color code, by a multiple logistic regression model in which more serious triage codes (yellow/red) have been compared to the others (green/white).

The A&E data for 2018 were also used to analyse the medical services, consultations and diagnostic investigations provided to patients admitted for home accidents, focussing on the comparison between the 0-14 years and the over 65 years age groups.

Trend significance was analysed using the Cochran-Armitage test for trend and the significance of the differences between the proportions was analysed using the chi squared test. These statistical analyses were performed using EpiInfo software. The costs of the services provided (health interventions and diagnostic tests) have been estimated on the basis of the rates of hospital services set by the Ministry of Health Decree of October 18, 2012 (7).

Results

During the study period, a total of 99,386 A&E admissions for HA were recorded,

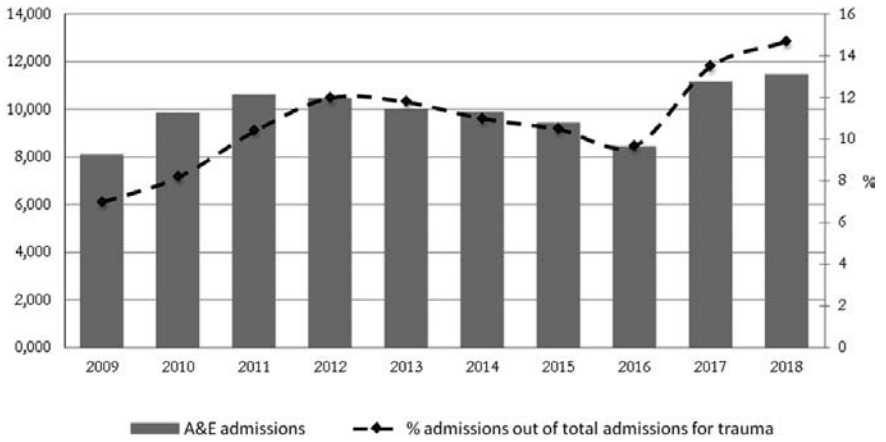

Figure 1 - Province of Trento. Number of A&E admissions for home accidents and corresponding percentage out of total admissions for injuries. Period: 2009-2018

with an annual average of 9,938 admissions. Between 2009 and 2018, the number of A&E admissions for HA rose from 8,100 cases to 11,453 (+41.4%), whereas the percentage of home accidents out of total A&E admissions rose from 3.7% in 2009 to 5.1% in 2018 and the percentage of HAs out of total trauma admissions rose from 7.0% in 2009 to 14.4% in 2018, an increase that is statistically significant (p for trend <0.001) and can be partly attributed to an improvement in the recognition and recording of sucxh events (Figure 1).

The overall mean age of the A&E observed caseload rose from 46.5 years in 2009 to 51.5 years in 2018, which is consistent with the progressive ageing of the population. In general, over the entire period, a slight prevalence of females over males was observed (51 vs 49%) and was constant from one year to another. The structure for age according to gender,

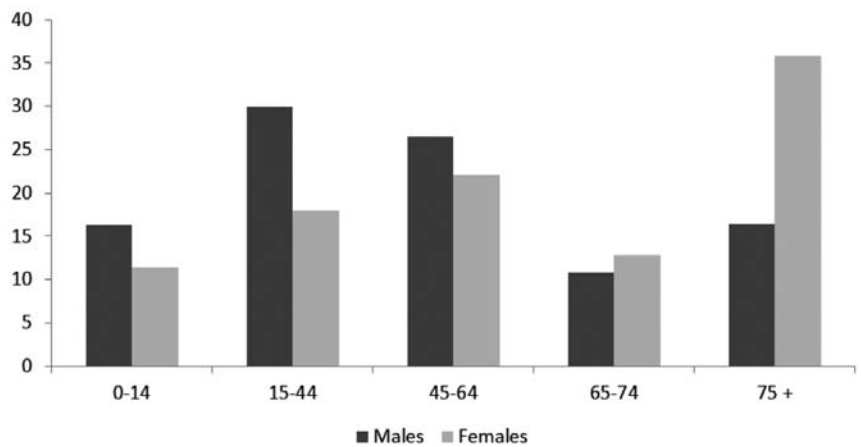

Figure 2 - Province of Trento. A&E admissions for home accidents. Age structure by gender in the caseload observed in 2018.

considering, for example, the data for 2018, shows two different situations: up to 64 years of age, males are represented to a greater extent (overall, between 0 and 64 years, in males, A&E admissions for home accidents accounted for 72.8% of all admissions, and in females they accounted for 51.4% of all admissions), whereas this proportion was inverted in the older age groups; more specifically, over 75 years of age, the percentage for females is more than double compared to males (Figure 2).

Events in the 0-14 years age group did not undergo any considerable variation in percentage terms from one year to another; however, a decrease was observed in the percentage of admissions in the 15-44 years group, and there was an increase in the number of cases involving the elderly subjects, especially those over 75 years of age.

By expressing the situation in terms of A&E inflow rates, it was observed that there was an increase in the incidence of admissions from 147.1 admissions per 10,000 inhabitants/year in 2009 to 196.9 admissions per 10,000 inhabitants/year in 2018, with a 39.0% increase. Throughout the observation period, inflow was lower amongst foreign nationals than amongst Italian citizens.

Considering the resident population (which on average represented 93% of the caseload) alone, no significant differences were observed in the A&E inflow rate with regard to gender over the years, and, despite the overall increase in inflow, the difference between genders remained within a range of 150 to 200 A&E admissions per 10,000 inhabitants/year. Throughout the observation period, inflow was lower amongst foreign nationals, which was, on average, 30% lower in the last period considered, than amongst Italian citizens (Figure 3).

As expected, inflow is strongly age-related, and throughout the observation period it was seen to be greater in the two extreme age groups: in 2018, for example, in the 0-4 years age group the inflow rate was 319.6 admissions per 10,000 inhabitants/year, whereas in the over 75 years age group the rate is 481.5 admissions per 10,000 inhabitants/year, 1.6 and 2.4 times the average inflow rate for domestic accidents in the province of Trento, respectively.

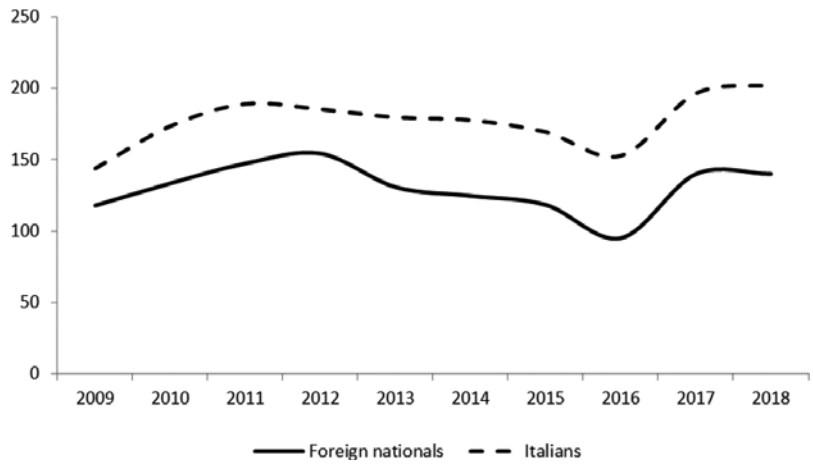

Figure 3 - Province of Trento. A&E inflow for home accidents/10,000 inhabitants. Comparison between Italians and foreign nationals. Trend for 2009-2018

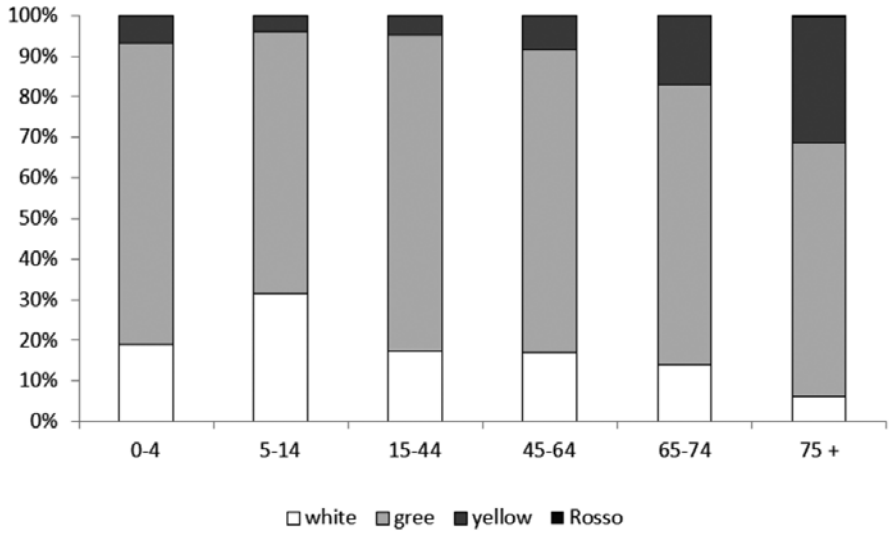

Figure 4 - Province of Trento. A&E admissions for home accidents. Allocation of triage colour code. Males and females according to age group. Year 2018.

In the vast majority of cases, these events are of a mild severity, considering that the proportion of white triage codes is around 16% and that of green triage codes approximately 73%, without any considerable variations from one year to another. Red triage codes are rare, whereas yellow codes, which are represented on average by 10% of cases, underwent a statistically significant increase from 2015 ($p<0.05$).

The level of severity is stratified according to age group, as is obvious from the analysis of the specific caseload for 2018 (Figure 4), which shows a higher level of severity amongst the elderly subjects for whom the proportion of yellow or red triage codes is approximately 17.1% for the 64-74 years group and 31.8% for the over 75 years group, respectively, compared to an average value of 11%.

This finding is also consistent with the A&E case management data, where hospitalisation, which is equal to 6.2% considering the data for 2018, almost exclusively regards subjects over 65 years of age (Table 1).

Table 1 - Province of Trento. A&E management of cases of domestic accidents. Comparison of the type of discharge at 0-14 years and >65 years age groups. Percentage values. Year 2018.

Type of discharge	0-14 years	Over 65 years
To home	92.1	74.3
Hospitalisation	0.5	14.5
Short-term observation	2.4	3.2
Self-discharge	1.4	1.2
Other	3.5	6.8

The elderly subjects also present higher event-specific mortality, considering that, over the whole period, 276 home accident-related deaths were recorded, with an average age of 84 years and on average equal to 4.4 deaths/1,000 hospitalisations for home accidents per year.

The multivariate analysis indicates that the female sex and the Italian citizenship represent independent risk factors for a more severe triage (proportion of yellow and red codes vs. white-green ones). The level of severity, apart the pediatric age, increases

Table 2 - Province of Trento. Association of socio-demographic factors with a serious triage code. Year 2018. Adjusted Odds Ratio and 95%IC.

Parameters	Odds Ratio	95%	C.I	P-Value
Italians vs. Foreigners	1.38	107	1.79	0.0133
Females vs. Males	1.16	1.04	1.31	0.0073
0-14 years vs. 15-44 years	1.65	1.28	2.13	0.0001
45-54 years vs.15-44 years	1.41	1.07	1.86	0.0125
55-64 years vs. 15-44 years	2.39	1.86	3.07	0.0000
65-74 years vs 15-44 years	4.13	3.28	5.20	0.0000
75 + years vs. 15-44 years	9.06	7.42	11.06	0.0000

with age, reaching the highest risk levels in those >75 old (Table 2).

The level of recording of the SINIACA variables describing the dynamics, the contingent activity and the place in which the event occurred increased over time, in a statistically significant way (p for trend <0.001), before reaching 100% coverage in 2018.

Accidental falls is by far the most frequent dynamic in all age groups, and is highest in the >75 years group (on average responsible for 59% of A&E admissions for HAs), followed by impact/crushing injuries (19%) and piercing/penetration injuries (9%).

Household chores (30%), activities of daily living (23%) and DIY (19%) are the three most common causes of domestic accidents. As expected, play and sports are the most common scenarios for the 0-14 years age group.

Accessory areas (19%) and the kitchen (16%) are the most common locations for domestic accidents, the majority of which occur in the kitchen in the extreme age ranges: 0-14 and 75+ years.

In over 2/3 of cases, the injuries sustained were to the limbs and the face/head (Tab. 2). More specifically, head/face injuries prevail in the youngest age group (62.8% of cases), whereas injuries to the torso and multiple sites prevail amongst the oldest age group (11.4% and 12.8%, respectively).

The type of injury is also age-related (Table 3). More specifically, wounds, burns and minor head injuries are particularly common in children aged 0 to 14 years, with percentages that for head injuries are more than double the average value (26.0% vs 10.8%), whereas fractures and dislocations are injuries that are typical of the older age groups (37.4% vs the mean value of 25.2%).

Table 3 - Province of Trento. Injury sites in cases of home accidents treated at A&E. Males and females. By age group. Year 2018 – Percentage values

Injury site	0-4	5-14	15-44	45-64	65-74	75+	Total
Upper limb	23.0	38.1	42.0	37.0	37.9	22.4	33.5
Head/ face	62.8	26.5	17.3	18.2	16.4	22.8	22.9
Lower limb	7.7	28.2	24.6	24.7	20.6	18.6	21.6
Torso	1.4	2.0	5.1	7.9	9.8	11.4	7.5
Multiple sites	2.2	1.3	2.4	4.6	7.5	12.8	6.2
Pelvis	0.6	2.3	1.9	2.5	4.9	9.7	4.4
Other	2.2	1.5	6.6	4.9	2.8	2.0	3.9
Total	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*	*100.0*

The same applies to the consumption of diagnostic and care resources provided by A&E facilities to patients who are victims of home accidents (Table 4). In this case, as expected, subjects over seventy-five years of age constitute a considerable burden for the health service, especially in terms of the investigations performed using imaging techniques: the use of x-ray, computed tomography and ultrasound in this age group is double that of the average values. The total costs amount to € 996,000, of which 42% for health services, 27% for CT/ RNM, 21% for conventional x-rays, 8.5% for laboratory tests and 1.2% for ultrasound controls. Those >65 absorb 61% of the total costs (12.8% in the 65-74 years, 48.2% in the >75 years). The total cost per case treated in the emergency room is 87 euros, increasing with increasing age, from 45 euros at the age of 14 to 160 euros in the >75 years of age).

Table 4 - Province of Trento. Type of injury in cases of home accidents treated at A&E.
Males and females of all ages and comparison between the extreme age groups. Year 2018.

Type of injury	Total	0-14 years	>75 years
Wounds/ minor burns	26.4	28.6	11.1
Minor head injury	10.8	26.0	17.3
Fractures/ dislocations	25.2	15.0	37.4
Bruising on the limbs	13.6	13.8	13.2
Sprains	6.5	5.5	7.4
Other	17.5	11.0	13.6

Discussion and conclusions

Not all injuries sustained in the home require medical treatment. In the vast majority of cases in which it is required, A&E departments are the most common sites for treatment. The ISTAT 2018 Multipurpose survey on households suggests that approximately 26,000 subjects/year suffer from a HA in the province of Trento (8). The data recorded at A&E facilities in the province of Trento suggest that approximately 1 in 2 cases that occurred in the population involved an A&E admission for a HA.

The identification and recording of HAs in these facilities therefore make it possible, with a good degree of accuracy and at least in the more severe cases, to obtain an epidemiological description of these events at population level, together with an indication of their circumstances and the consequences for health. This is especially true for small areas such as the Province of Trento, where the A&E facilities have been involved in computerisation for some time and whose data are combined in a single central database.

The quality and completeness of the data recorded in any case require high staff sensitisation, which is confirmed, amongst other things, not only by the increase in the number of cases recorded, but also, more specifically, by the level of recording of the SINIACA variables regarding the dynamics, contingent activity and place in which the events occurred. In 2018, the level of coverage of these variables reached 100%, a fact that can be attributed to specific instructions provided by the Provincial Health Authority's Department of Emergency Medicine and First Aid. This excellent result would make it opportune to complete, in the facilities of the province of Trento, the recording of the full set of SINIACA variables by including in the A&E database also those data regarding the object associated with the domestic activity. The complete recording of these variables is also identified by the WHO as being necessary for a scrupulous and correct monitoring of accidents (9).

The completeness of the A&E data and the possibility of obtaining case stratification based on social and demographic characteristics would make it possible, through a virtuous integration of services,

Table 5 - Province of Trento. A&E admissions for home accidents. Consultations and services provided to patients. Total and comparison between the 0-14 and >75 years age groups. Year 2018.

Services/investigations	Total caseload	0-14 years caseload	75+ years caseload
Consultations/patient	1 every 2.6 patients	1 every 2.7 patients	1 every 2.1 patients
Medical services/patient	2.4/patient	2.1/patient	2.9/patient
Lab tests/patient	2 investigations/patient	1 every 6.5 patients	5/patient
X-rays/patient	1.1/patient	1 every 2.5 patients	2.1/patient
CT scans/patient	1 every 4.5 patients	1 every 131 patients	1 every 1.6 patients
Ultrasound scans/patient	1 every 55 patients	1 every 143 patients	1 every 27 patients

to use these data for the implementation of initiatives intended to control or prevent this kind of event (10).

The access of pediatric cases can for example represent an opportunity to provide parents with indications and preventive tools useful to avoid subsequent events (11), just as the access of the elderly can represent an opportunity to offer home security assessment interventions by Prevention departments (12).

The A&E inflow rate for HAs rises over time, in the same way as reported for the Region of Tuscany (13), a fact that could be in part attributed to an improvement in the recognition and recording of events, rather than to an actual increase in the number of events. In any case, the trend over time shown does not appear to correlate with the population-level findings of ISTAT's multipurpose surveys (8). The inflow rate recorded amongst residents in the province of Trento would appear to be lower than that reported in other Italian regions (13) and in all the European countries (14). As the levels of A&E department digitalisation vary with geographical area, as do the criteria for the detection and recording of the events in the individual facilities, the data regarding one area may not be directly comparable with those of other areas (15).

The inflow rate does not vary with gender and remains lower in all cases amongst foreign nationals, even for the individual age groups, than amongst Italians.

A reduced access of foreigners could relate not so much to a difficulty in accessing emergency rooms, as to a lower risk of accidents at home, also related to a lower proportion of people over sixty-five in this population compared to the Italian population.

As expected, the inflow rate is higher in the extreme age groups: 0-14 and over 75 years, due to the particular susceptibility of these age groups to domestic accidents. This finding is consistent with both Italian and European data (13, 14).

During the period studied, there was an increase in inflow amongst the over 75 years age group, as reported by the region of Tuscany (13), which is consistent with the progressive ageing of the population.

The level of severity, as indicated by the triage colour code, remained low, as previously reported (14, 15). As reported by the multivariate analysis, female gender and Italian citizenship are independent risk factors for a higher level of severity of the events. From 15 years of age, the level of severity increases with age, a fact that is associated with an increase in multiple-site injuries and in the frequency of fractures, due to the greater frailty of elderly subjects. A stronger impact amongst elderly subjects is also documented by the A&E case management criteria, where the likelihood of hospitalisation for a subject over 65 years of age is 30% higher than for a paediatric subject. Similarly, the probability

of death either at the A&E department or subsequently, after hospitalisation, is also higher for the older age group.

The recording of the services provided and of the diagnostic investigations required also makes it possible to establish the care burden associated with the management of domestic accidents. The cost estimates, calculated on the basis of the ministerial rates, provide a considerable value, of approximately one million euros, without taking into account the costs incurred directly by households and indirect costs. 40% of health care and 72% of diagnostic procedures are the prerogative of the elderly, who represent 61% of the total costs. In particular, the unit cost of services provided at first aid services appears to be about 4 times higher for the >75 years compared to children.

Acknowledgements
The authors wish to thank Ms Antonella D'alpaos for her help consulting the database, retrieving the references and editing the manuscript.

Riassunto

Gli incidenti domestici in provincia di Trento. Dieci anni di osservazione degli accessi presso le strutture di pronto soccorso

Premessa. Gli incidenti domestici sono eventi accidentali che occorrono in un'abitazione o nelle sue pertinenze (scale, cortili, giardini, cantina, garage ecc.). In Italia sono operative diverse tipologie di sorveglianza del fenomeno tra cui il sistema Passi e la Multiscopo sulle famiglie dell'ISTAT. Solo il Sistema SINIACA (Sistema Informativo Nazionale in Ambito di Civile Abitazione) coordinato dall'Istituto Superiore di Sanità, fornisce peraltro informazioni sanitarie su eventi, circostanze e conseguenze, in riferimento soprattutto ai dati di Pronto Soccorso.

Disegno dello studio. Si tratta di uno studio osservazionale sull'andamento degli incidenti domestici in provincia di Trento, utilizzando i dati di accesso ai punti di pronto soccorso, nel periodo 20q09-2018, integrati con dati di mortalità e dimissioni ospedaliere.

Metodi. Sulla base degli archivi informatizzati annuali degli accessi in Pronto Soccorso, sono stati estratti i record relativi agli accessi per incidente domestico. Per il periodo 2009-2018 si è calcolato: l'andamento temporale, totale, per genere e classe di età, il tasso di afferenza/10.000 nei residenti, distinguendo per genere, cittadinanza (italiani e stranieri) e classi di età. Si è analizzata inoltre la copertura delle variabili aggiuntive SINIACA, relative a dinamica, attività e luogo dell'incidente. Relativamente alla casistica relativa all'anno 2018, si sono analizzate la sede e la tipologia dei traumi, il livello di severità, l'esito e le prestazioni erogate confrontando le classi di età 0-14 e 65 anni e oltre. La significatività dei trend è stata analizzata con il trend test di *Cochran-Armitage* e la significatività delle differenze tra le proporzioni è stata analizzata con il test del chi quadrato. Sono stati calcolati i costi delle prestazioni erogate, nel complesso e per classe di età.

Risultati. Nel periodo in studio sono registrati 99.386 accessi in PS per incidente domestico, per una media annua di 9.938. Dal 2009 al 2018 si ha un incremento, statisticamente significativo, pari a + 41,4%, in parte dovuto a un migliore riconoscimento e registrazione degli eventi. Le femmine prevalgono sui maschi, in particolare oltre i 75 anni. Nel tempo si registra un aumento dei casi in età oltre i 65 anni, collegato al progressivo invecchiamento della popolazione. Considerando i soli residenti, il tasso di afferenza in PS, passa da 147 accessi/10.000 nel 2009 a 197 accessi/10.000 nel 2018, con un incremento del 39,0%. L'afferenza è maggiore nelle due classi estreme: nel 2018, nella classe 0-4 anni il tasso di afferenza è pari a 319 accessi/10.000 e nella classe di età 75+ anni il tasso raggiunge i 481 accessi/10.000, rispettivamente 1,6 e 2,4 volte l'afferenza media per incidente domestico della provincia di Trento. Gli accessi negli stranieri sono minori rispetto agli italiani. Gli eventi sono nel complesso di scarsa gravità, i codici bianchi rappresentano 16%, dei casi e i verdi il 73%. Il livello di gravità è maggiore negli ultra 65 enni, come pure nelle donne e nei cittadini italiani. Il livello di registrazione delle variabili SINIACA aumenta nel tempo raggiungendo il 100% di copertura nel 2018. La caduta è la dinamica più frequente in tutte le età; l'attività domestica, l'attività di vita quotidiana e il fai da te sono le tre attività che ricorrono più frequentemente. Le pertinenze della casa e la cucina sono le aree di maggiore occorrenza. Gli arti e la testa/faccia rappresentano oltre i 2/3 delle sedi dei traumi. I traumi alla testa/faccia prevalgono nei più piccoli. Ferite, ustioni e traumi cranici riguardano in particolare i bambini di età compresa tra 0-14 anni, mentre fratture e lussazioni sono tipiche delle età più avanzate. Il consumo di risorse diagnostiche e assistenziali è molto più elevato negli anziani i quali assorbono il 61% dei costi complessivi della casistica trattata nell'anno 2018.

Conclusioni. I punti di pronto soccorso costituiscono un osservatorio privilegiato per il monitoraggio degli incidenti domestici nella popolazione. Possiamo stimare,

confrontando i nostri dati con i dati ISTAT, che un caso su due di incidente domestico occorso nella popolazione abbia avuto un accesso in PS. L'accesso aumenta nel tempo specie negli anziani e non risulta maggiore negli stranieri rispetto agli italiani. Il tasso di afferenza è maggiore nelle età estreme: 0-4 e 75+ anni, classi di età che si diversificano in relazione a tipo di lesione, livello di gravità ed esiti. Risulta fondamentale poter disporre di una completa informatizzazione dei dati di accesso in PS come pure importante è la sensibilizzazione delle strutture e degli operatori, al fine di poter disporre di dati di buona qualità. La completezza dei dati PS e la possibilità di ottenere una stratificazione dei casi secondo le caratteristiche socio-anagrafiche potrebbe innescare, in una logica virtuosa di integrazione tra servizi, una possibilità di utilizzo per azioni di prevenzione. Queste se condotte in modo efficacie, potrebbero anche contribuire a contenere i costi sanitari.

References

1. www.istat.it [Last accessed: 2020, Mar 28].
2. www.epicentro.iss.it/passi/ [Last accessed: 2020, Mar 28].
3. www.epicentro.iss.it/passi-argento/info/ [Last accessed: 2020, Mar 28].
4. www.istat.it/it/archivio/ [Last accessed: 2020, Mar 28].
5. Pitidis A, ed. Incidenti domestici in Italia: sorveglianza, modelli e azioni di prevenzione – Rapporto del Sistema Informativo Nazionale sugli Infortuni in Ambienti di Civile Abitazione (SINIACA): 2005-2006. Roma: Istituto Superiore di Sanità, 2012.
6. European Association for Injury Prevention and Safety Promotion. Joint Action on MonitoringInjuries in Europe (JAMIE). A collaborative project aiming at creating a harmonised injury information system covering the entire EU-region. Amsterdam: Eurosafe, 2017. Available on: http://www.eurosafe.eu.com/ [Last accessed: 2020, Mar 28].]
7. DM. 18 ottobre 2012. Remunerazione prestazioni di assistenza ospedaliera per acuti, assistenza ospedaliera di riabilitazione e di lungodegenza post acuzie e di assistenza specialistica ambulatoriale. Gazzetta Ufficiale. Serie Generale n. 23 del 28-01-2013. (Suppl Ord n. 8).
8. www.Dati.istat.It [Last accessed: 2020, Mar 28].
9. Holder Y, Peden M, Krug E, Lund J, Gururaj G, Kobusingye O, eds. Injury surveillance guidelines. Geneva: World Health Organization, 2001.
10. Piffer S, Coppo A. Un assetto organizzativo per i servizi sanitari per la prevenzione degli incidenti domestici. In: La prevenzione degli incidenti domestici in età infantile. Sistema Nazionale Linee Guida, 2017: 41-3.
11. Warda LJ. Prevenzione degli incidenti: Efficacia degli interventi di primo livello. In: Feldman W, ed. Pediatria basata sull'Evidenza. Ed. Ital. Delfino Editore, 2002: 267-81.
12. PNLG 13. Prevenzione delle cadute da incidente domestico negli anziani. Linea Guida. Zadig Ed., 2009.
13. Innocenti F. Epidemiologia degli incidenti domestici in Europa, Italia e Toscana. ARS Toscana, January 2018.
14. European Association for Injury Prevention and Safety Promotion (EuroSafe): Kisser R, Walters A, Rogmans W, Turner S, Lyons RA, eds. Injuries in the European Union 2013-2015. August 2017. Available on: www.eurosafe.eu.com [Last accessed: 2020, Mar 28].
15. Patussi V, Massari S, Farchi S. Sorveglianza degli incidenti domestici. In La prevenzione degli incidenti domestici in età infantile. Sistema Nazionale Linee Guida, 2017: 21-5.

Corresponding Author: Silvano Piffer, MD, Director, Servizio Epidemiologia Clinica e Valutativa, Azienda Provinciale per i Servizi Sanitari, Centro per i Servizi Sanitari, Viale Verona, 38123 Trento, Italy
e-mail: silvano.piffer@apss.tn.it