

Healthcare Risk Management and Monitoring of patient falls in Italian National Service. The experience of a Local Health Authority.

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ASL ROMA 2

Keywords: *fall, risk management, adverse event*

ABSTRACT

Falls are a widespread concern in hospitals settings.

In Italy, falls are the fourth frequent damage claim type after surgical, diagnostic and therapeutic error and 90% of falls are avoidable.

The first necessary action for the prevention of falls consists in identifying the possible risk factors, in relation to the characteristics of the patient and those of the environment and the structure that hosts him, in terms of safety, organization and adequacy of the process welfare. In this work we wanted to evaluate the extent, frequency and characteristics of the phenomenon of falls in the population hospitalized at the Local Health Authority called "Roma 2", with the aim of analyzing the critical issues to allow the identification of possible preventive and improvement interventions as well as reducing the risk of falls.

INTRODUCTION

The progressive aging of the population represents a major challenge for Public Health and the National Health Service. (1-6) Among the various problems that can affect the elderly there is also that of falls, an issue that is often underestimated but which instead must be addressed with the attention it deserves, as they represent a serious risk to the health of the most fragile people which is widely foreseeable and avoidable. (7-10)

Falls in hospital are frequent events with potentially disastrous consequences.

Falls among hospital inpatients are the most frequently reported safety incident with more than 250,000 recorded annually in England and Wales. The most recent audit data show an average of 6,63 falls per 1,000 occupied bed days (OBDs), which equates to more than 1,700 falls every year in an 800-bed general hospital at current bed occupancy rates 30-50% of falls result in some physical injury and fractures occur in 1-3%. Even without such injuries, harm to patients, carers and staff frequently manifest through associated psychological distress, fear

of further falls, prolonged hospital stays, complaints, litigation, guilt and dissatisfaction. (11)

Each year, roughly 700,000 to 1 million patient falls occur in U.S. hospitals resulting in around 250,000 injuries and up to 11,000 deaths. About 2% of hospitalized patients fall at least once during their stay. Approximately one in four falls result in injury, with about 10% resulting in serious injury. (12)

The situation in Italy is no longer comforting. In fact, according to the medical malpractice report on the trend of medical malpractice risk in the Italian public and private healthcare sector, 9.9% of damage claims, from 2009 to 2017, are due to accidental falls in hospitalized patients or during outpatient care, which cost almost 33 million euros. Falls are the fourth frequent damage claim type after surgical, diagnostic and therapeutic error and 90% of falls are avoidable. (13)

Given the constant growth of the elderly population (it is estimated that in 2056 the share of over 65s will consolidate around the value of 33.2%) and the main problems associated with falls, it is increasingly appropriate to use the shared base of knowledge present in the literature to identify possible risk factors and evaluate the effectiveness of prevention interventions implemented by healthcare facilities. (1)

The first necessary action for the prevention of falls consists in identifying the possible risk factors, in relation to the characteristics of the patient and those of the environment and the structure that hosts him, in terms of safety, organization and adequacy of the process welfare. In this sense, the factors responsible for falls can be divided into: intrinsic factors, relating to the patient's health conditions, which include both personal data and the pathology causing hospitalization, comorbidities and pharmacological therapies; extrinsic factors, relating to the organizational aspects of the inpatient facility, the environmental and ergonomic characteristics of the facility and the healthcare facilities used. (14)

The ASL Roma 2 extends in the south-east area of the City of Rome, over an area of 470 km². The resident population is approximately 1,300,000 inhabitants, equal to 45% of the municipal population with an average density of 2,800 inhabitants per km².

The ASL Roma 2 is divided into six territorial health districts and two hospital facilities: the Sandro Pertini facility, home to a level I DEA and the S. Eugenio/CTO Andrea Alesini facility, the latter consisting of two factories. Sant'Eugenio, home to a level I DEA, and CTO Andrea Alesini, home to a specialist orthotraumatology of the limbs open H 12. (15)

In this work we wanted to evaluate the extent, frequency and characteristics of the fall phenomenon in the population hospitalized within the ASL Roma 2, with the aim of analyzing the critical issues to allow the identification of possible preventive and improvement interventions and reduce the risk of falling. We also wanted to compare these data with those studied by the *National Patient Safety Agency-Great Britain (NPSA)*, which developed a report based on the reports received by the English national Incident Reporting system. (16)

MATERIALS AND METHODS

The analysis of the incident reporting of the ASL Roma 2 in the period from 2019-2023, the number of reports received ("fall" event), through the company reporting system, was a total of 1,444.

In the last five years, the number of falls in 2023 comes in first place, in descending order (N.358; 25% of the total); followed by falls in 2021 (N.332;23%), 2022 (N.316;22%), 2020 (N.234;16%) and 2019 (N.204;14%). (Figure 1 and 2)

Year	2019	2020	2021	2022	2023	Totale
Number of falls	204	234	332	316	358	1,444
Percentage	14%	16%	23%	22%	25%	100%

Figure 1 Number of falls (2019-2023)

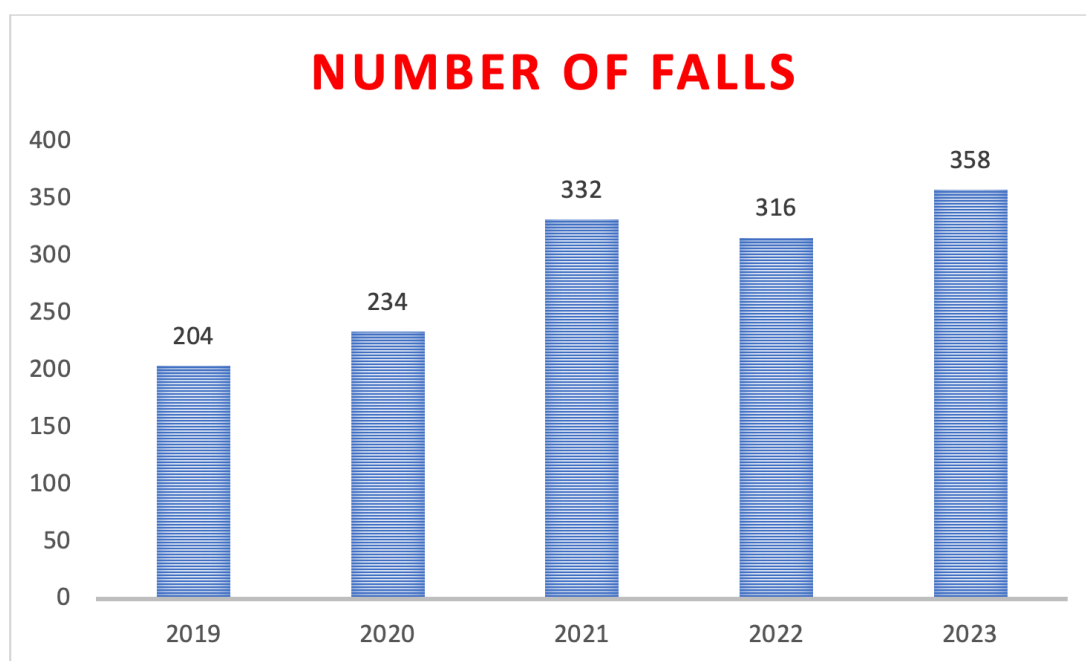


Figure 2 Number of falls (2019-2023)

Even in ASL Roma 2, as described in the literature, patient falls are one of the most recurrent sentinel events in the intra-hospital setting: No. 1,343 (93% of the total).

However, 101 events were recorded in the outpatient area (7% of the total).

In the period 2019-2023, in the ASL Roma 2 the data indicate that the number of falls is higher in the Sandro Pertini Hospital (No.690; 51%) compared to the S. Eugenio Hospital (No. 553; 41%) and at the CTO Hospital (No. 100; 8%). (Figure 3 and 4)

Hospitals	S.Eugenio Hospital	S.Pertini Hospital	CTO Hospital	Totale	Hospitals	S.Eugenio Hospital
No. falls	553	690	100	1,343	No. falls	553
Percentage	41%	51%	8%	100%	Percentage	41%

Figure 3 Number of falls in hospitals

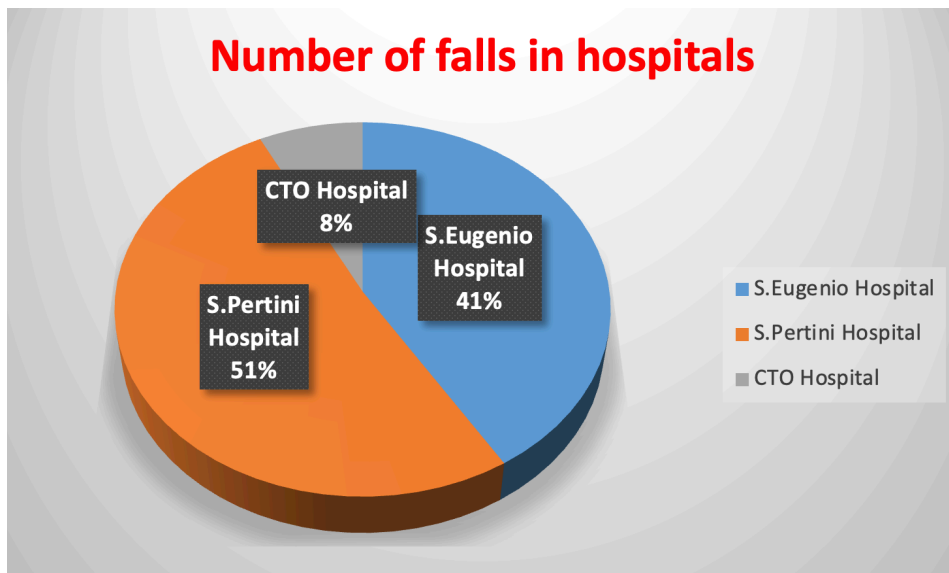


Figure 4 Number of falls in hospitals

A clear prevalence of the phenomenon is observed in male patients, the figure for which is increasing in absolute terms: in fact, the number has gone from 134 to 214 events.

The data relating to the female patient population shows a slight percentage increase (from 34% in 2019 to 40% in 2023) and a more significant increase in absolute terms from 70 events in 2019 to 144 in 2023. (Figure 5 and 6)

Year	2019	2020	2021	2022	2023
Sex					
M					
Number	134	151	198	189	214
Percentage	66%	65%	60%	60%	60%
F					
Number	70	83	134	127	144
Percentage	34%	35%	40%	40%	40%
Total	204	234	332	316	358

Figure 5 Distribution by sex (2019-2023)

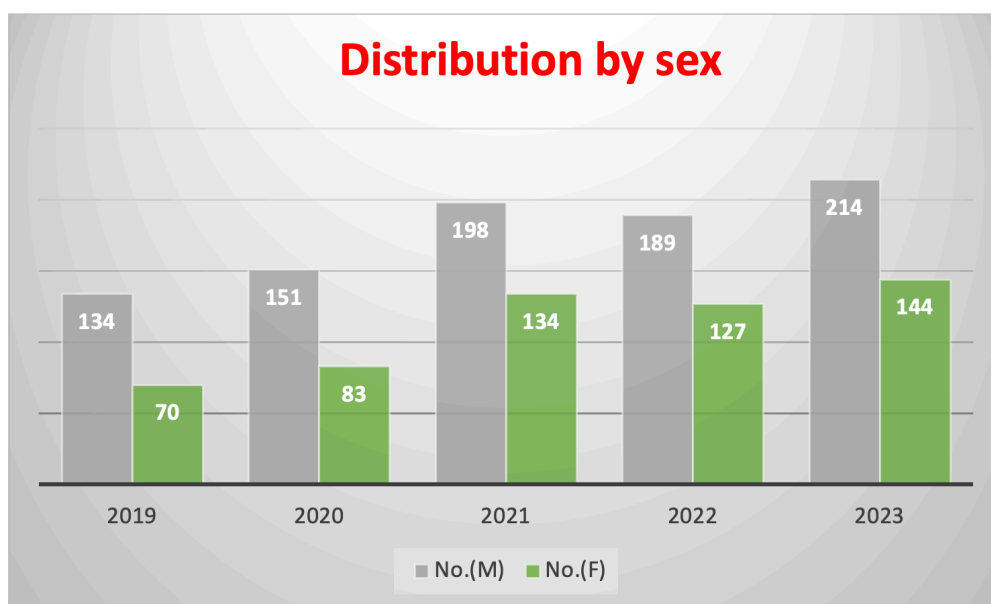


Figure 6 Distribution by sex (2019-2023)

The distribution of falls by age group, again carried out on 1,444 events, shows that 31% of falls occur in the older age groups, between 80 and 89 years. (Figure 7 and 8)

Age classes	0-49	50-59	60-69	70-79	80-89	>90
Number (No)	167	130	173	397	453	124
Percentage (%)	12%	9%	12%	28%	31%	8%

Figure 7 Distribution by age group (2019-2023)

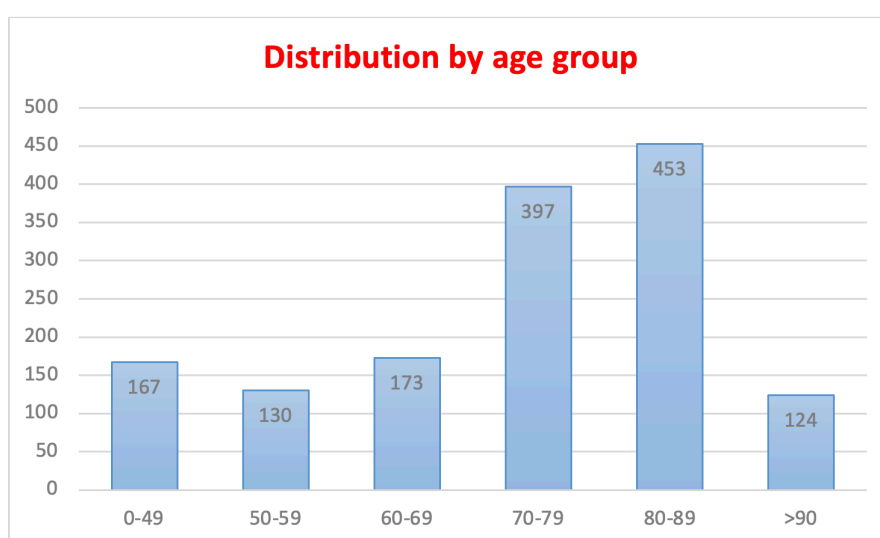


Figure 8 Distribution by age group (2019-2023)

Figures 9 and 10 describe the distribution of falls based on the day of the week which would seem to highlight a lower incidence of the phenomenon on Fridays and Sundays.

This data is not correlated with the number of human resources present in service.

Day of the week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
No. of falls	216	225	213	229	189	209
Percentage	15%	16%	15%	16%	13%	14%

Figure 9 Distribution of falls by day of the week

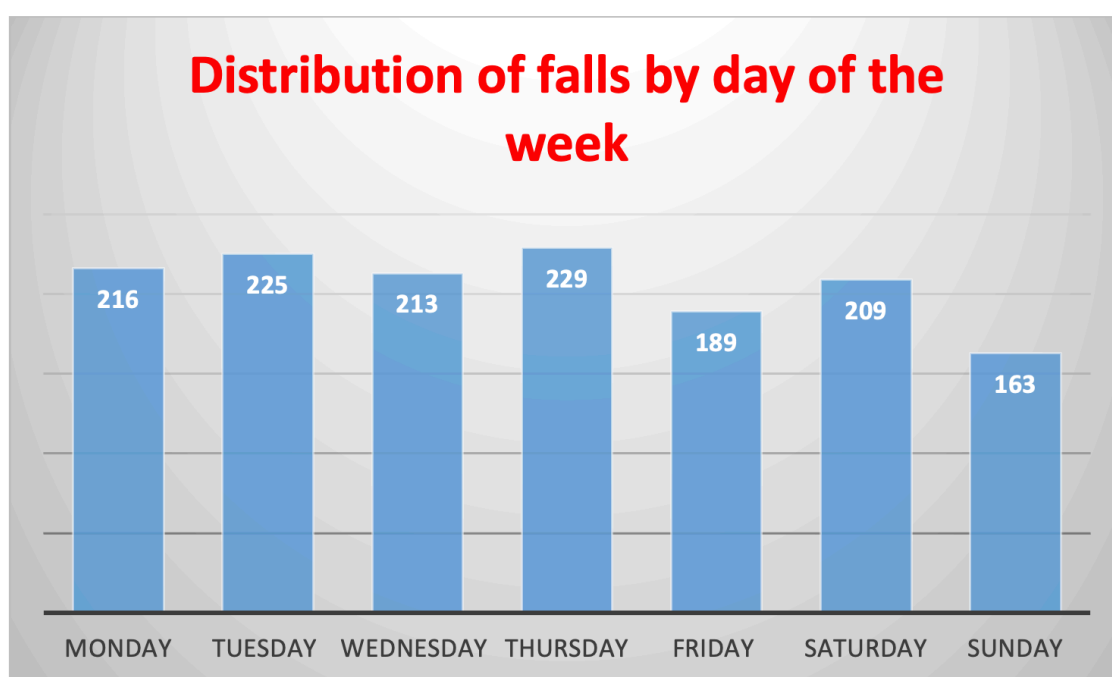


Figure 10 Distribution of falls by day of the week

In relation to the place of occurrence, the data highlights that in 68% of cases the room is generically indicated (978 cases), followed by the bathrooms (11%, 162 cases), the hospitalization department (9%, 120 cases) and from common spaces (corridors and stairs; 4%, 62 cases). (Figure 11 and 12)

It is also observed that patients who fall in the hospital room mostly fall from bed. Although the reports indicate that all preventive actions have been implemented, including moving the beds in height, the damage reported leads to the inference that this measure was not applied in the circumstances of the event detected.

On the other hand, where the bed had actually been placed at the lowest size close to the floor, it also appears that the sides were raised, almost as if to induce injury-inducing behavior.

Place of occurrence	bedroom	bathrooms	department	corridors and stairs	room	open spaces
No. of falls	978	162	120	62	43	18
Percentage	68%	11%	9%	4%	3%	1%

Figure 11 Distribution by place of occurrence

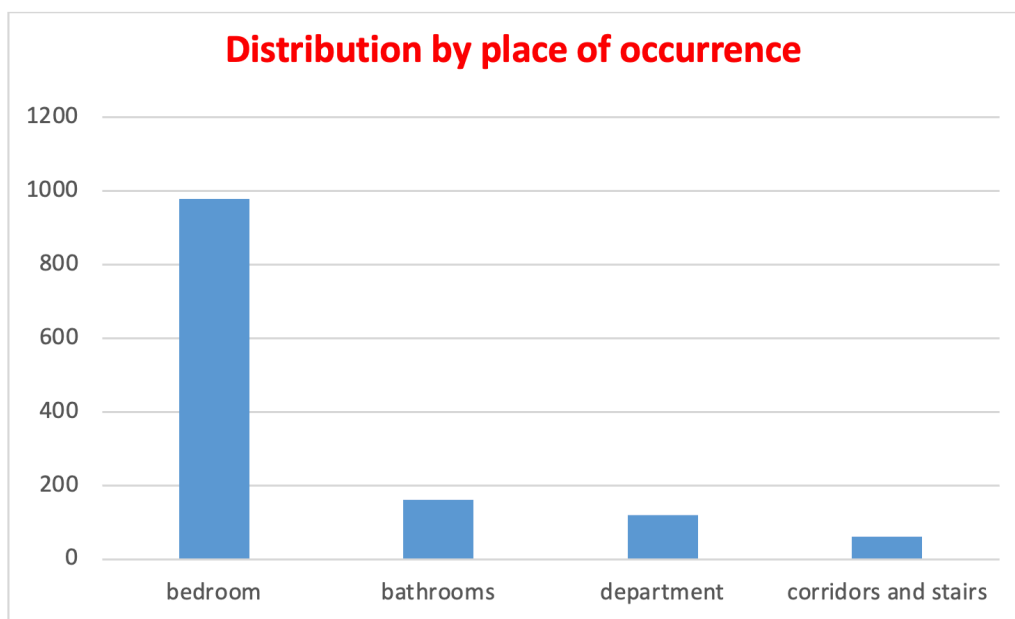


Figure 12 Distribution by place of occurrence

From the analysis of the aggregate data it emerges that the outcome determined by the fall event is distributed as follows: no damage No. 556 (39%), light damage No. 684 (47%), moderate damage No.166 (11%), severe damage No. 37 (3%). (Figure 13 and 14)

Amount of damage	no damage	mild	moderate	severe	death	Amount of damage
No. of falls	556	684	166	37	1	No. of falls
Percentage	39%	47%	11%	3%	0%	Percentage

Figure 13 Distribution by extent of damage

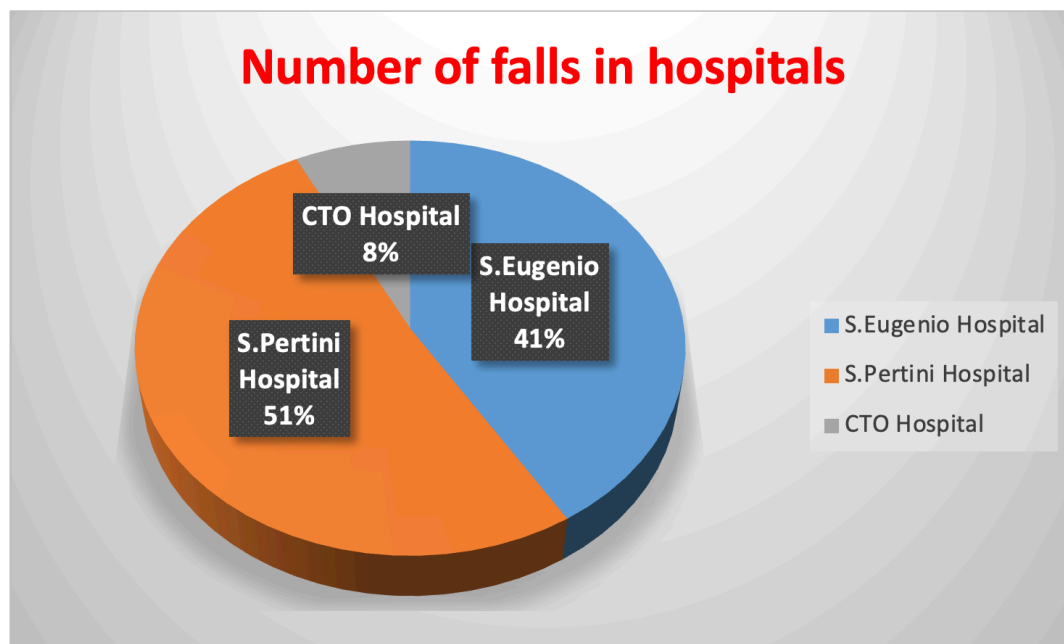


Figure 14 Distribution by extent of damage

DISCUSSION

Falls in healthcare settings represent an important indicator of the quality of care and safety of care. (17) It is essential to remember that, at a regulatory level, Law 24 Gelli-Bianco, in article 1, attributes significant importance to the right to safety of care as an element inherent in the constitutional value of the right to health. (18) Consequently, it is a duty of the healthcare institution to adopt risk management programs, actively involving all components of the healthcare system, including falls. (19).

Italian Ministerial recommendation number 13 for the prevention and management of patient falls in healthcare facilities outlines a series of procedures or guidelines to prevent the event of a fall and identifies both generic (for all patients) and specific (for patients with high risk of falling) (14).

Furthermore, let's not forget the teaching of the Supreme Court according to which "the hospitalization contract produces, as a natural effect pursuant to art. 1374 c.c., the obligation of the healthcare facility to supervise the patient adequately with respect to his conditions, in order to prevent him from causing damage to third parties or suffering damage" (see Civil Cassation section III, 11/11/2020, no. 25288). (20)

Therefore, their monitoring has the main purpose of identifying the most frequent risk factors and providing healthcare professionals with both a tool for identifying patients at risk and a series of indications to adopt to prevent them.

Falls can cause in patients: fear of falling again, loss of safety, anxiety, depression, factors that can lead to a decrease in autonomy, increased disability and, in general, to a very significant reduction in the quality of life. In addition to physical

and psychological damage, falls that occur in a hospital setting lead to an increase in hospital stay, additional diagnostic and therapeutic activities and/or possible further hospitalizations after discharge, with an increase in health and social costs. (14)

The monitoring and prevention of falls in hospital are part of a clinical risk management context that began within the ASL ROMA 2 in 2019.

The growing dimensions of the phenomenon are linked to a progressive diffusion of the culture of reporting. (21)

However, it is necessary to point out that the analysis conducted is based on the examination of the reporting forms and therefore the number of events was probably underestimated, which is especially frequent when the fall did not lead to consequences and in light of the NPSA report (The National Patient Safety Agency) where minor injury is reported in 29% of falls. (16)

In ASL Roma 2, 40% of events occur after the age of 80, compared to 50% of events indicated in the NPSA report. (16)

However, it should not be forgotten that, despite the population and reporting methods (anonymous form) being comparable, the NPSA report is the result of a national monitoring system active since 2001 while in the ASL Roma 2 falls have begun to be reported with a homogeneous method for less than five years and therefore the culture of reporting is still spreading. (17)

In the NPSA report, reports of falls come from almost all the structures providing hospitalization services (98%), even in the ASL Roma 2 the percentage stands at around 93%. (16)

The analysis showed that men fall to a greater extent than women, in fact the NPSA also reaches the same conclusion.

The falling pattern remains almost constant during the week with the peak on Thursday, although it reduces slightly at the weekend, similarly to what was found by the NPSA. For a more precise estimate, the incidence should have been calculated in relation to the occupancy rate of beds, but this was not possible. For the same reason, it was not possible to evaluate whether quarterly differences in reporting rates were related to fluctuations in hospitalizations. (16,17)

Nonetheless, we believe that increasing the attention of healthcare workers on the problem of falls is fundamental because if awareness of the problem and the culture relating to the phenomenon disappears among them, there will not even be the will to evaluate it correctly and report it adequately and scrupulously.

At the same time, the evaluation and reporting of the fall should be guided by a sense of necessity on the part of doctors who, in acquiring renewed awareness of the problem, would vindicate the patient's need for safety, thus guaranteeing the best possible care.

To obtain satisfactory results it is therefore necessary to act simultaneously on three levels: organizational (dedicated work group, procedures), staff/communication (fostering the culture of reporting through training initiatives and communication between operators) and patient (assessment of intrinsic risk factors and extrinsic and their possible modification - multi-drug therapy, restraint, inadequate footwear). (17)

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