

RESEARCH ARTICLE

Documentation of pressure ulcers in medical records at an internal medicine ward in university hospital in western Sweden

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Abstract

Objectives: Pressure ulcers cause suffering, prolong care periods, and increase mortality. The aim was to describe and analyze the documentation of pressure ulcers and focused on the medical records from an internal medicine ward in a university hospital in western Sweden.

Methods: A quantitative, retrospective review of medical records was conducted for all care events ($n = 1,458$) with descriptive statistics.

Results: Documentation of the pressure ulcers in care plans was 2.1% ($n = 31$) compared to 6.7% ($n = 46$) within final notes written by registered nurses (RN), a lower result compared to PPM ($n = 3/14$, 21.4%). Risk assessments were carried out in 68 (4.7%) care events, and 31 care plans included pressure ulcers. Moreover, 198 cases of tissue damage were documented, 43 (21.7%) defined as pressure ulcers, the other 147 (74.2%) lacked definition.

Conclusions: Differences (2.1%–21.4%) highlight improvements; knowledge and communication of pressure ulcers ensure reliable documentation in medical records.

KEYWORDS

documentation, hospital care, pressure ulcer, statistics, suffering

1 | INTRODUCTION

Pressure ulcers are preventive health problems that cause suffering and additional costs due to increased healthcare needs, especially among elderly and fragile patients. However, through risk assessments and teamwork, health and well-being can be improved by managing the risk factors (WHO, 2020). Therefore, the current study intended to contribute to the knowledge about the staff's documentation of pressure ulcers into the medical records in a hospital setting.

2 | BACKGROUND

Pressure ulcers are a global health problem [12.8% prevalence rate globally] that cause tissue damage due to continuous pressure and

friction in connection with movement and/or use of medical equipment (Li et al., 2020). Cell deformation is a recognized important mechanism of cell damage as well besides ischemia caused by pressure or friction which triggers inflammatory processes (Mervis & Phillips, 2019). In Europe, the prevalence is around 14.5%, which is higher than that in Asia [3%] (Li et al., 2020). The European Pressure Ulcer Advisory Panel [EPUAP], National Pressure Ulcer Advisory Panel, [NPUAP] and Pan Pacific Pressure Injury Alliance [PPPIA] (EPUAP/NPUAP/PPPIA, 2019) have developed an international classification system [categories 1–4] as follows: (1) includes redness, painful with no fade, no blanchable, pressure and temperature differences between the affected area and surrounding skin; (2) describes pressure ulcers as partial tissue damage, partial thickness loss, open pink-red wound without fibrin coating, bone, tendon or muscle involved; (3) full thickness tissue loss at the location; and (4)

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involves the bone, tendon or muscle and fibrin, and/or has visible necrosis (EPUAP/NPUAP/PPPIA, 2019).

Research (Gunningberg et al., 2017) has shown differences in staff knowledge about pressure ulcers. Registered nurses [RN, 26.5%] were more knowledgeable than assistant nurses [AN, 16.5%] in background causes, and why they worked more preventive than AN. Risk factors such as reduced mobility, impaired skin elasticity, cardiovascular disease (Ferguson et al., 2019; Jaul et al., 2018), malnutrition, diabetes, depression and fractures (Bluestein & Javaheri, 2008) were more common among the elderly. Moreover, extended hospital stays [>5 days], oedema, incontinence, abnormal albumin levels and low weight [BMI <20] also increase the risk of pressure ulcers (Alhaug et al., 2017; Ferguson et al., 2019; Kaşıkçı et al., 2018). Medical equipment such as wheelchairs, beds, oxygen masks, intravenous access and neck collars are other risk factors as they are connected with the skin, with pressure and friction, in moist surfaces (Bluestein & Javaheri, 2008; Jackson et al., 2019; Jaul et al., 2016). Therefore, awareness of vulnerability [for example, in elderly persons] is highlighted, and both risk assessment and skin inspection [for example, within 8 hr of the patient's arrival] are stressed to prevent suffering and unnecessary financial costs due to extended hospital stays (Latimer et al., 2019). In addition, patients with pressure ulcers have both a low quality of life and negative emotions such as frustration, anxiety, and depression (Wu et al., 2018). Therefore, relation between pressure ulcers risk factors, incidence and nursing documentation in hospital is crucial. For example, Li (2016) describes that staff nurses at intensive care units perform poorly documenting pressure ulcers due to appearance, staging and treatment, why patient's needs due to nursing interventions are limited. Integrating evidence-based pressure ulcer prevention within electronic health records, EHR, requires regulatory reporting to improve nursing flow by providing clinical decision support (Gilbert, 2015). For example, more comprehensive documentation was found in EHR compared with paper records; however, there were shortcomings due to documentation in both systems (Tubaishat et al., 2015). Moreover, comparing patient examinations with patient record contents, patient's records lacked documentation of pressure ulcers and preventive interventions (Hansen & Fossum, 2016).

Under Swedish law (Swedish Code of Statutes, 2010), pressure ulcers are described as a care injury, a complication that could be avoided. Therefore, to ensure patient safety, systematic improvement is stressed. Moreover, the World Health Organization (2020) highlighted that a positive work environment and teamwork motivated health professionals to document, prevent and analyse healthcare injuries. One way to improve the quality of care is to use a national quality register. Sweden has around 100 quality registers (acute, community health care), one of which is Senior Alert [SA], a structured and preventive register [mostly used in community care for those who are 65 years and older] to identify risks and analyse their causes within four pre-selected areas, one of which is pressure ulcers. SA includes risk assessments, planning and implementation of preventive measures, which are thereafter followed up and evaluated. Research about SA showed that staff members, for

example, RN, performed continuous evaluation of care events [hospitalization, home health care] in close collaboration with the patient (Edvinsson et al., 2015; Rosengren et al., 2012). Even though staff members reported different and time-consuming routines SA improved the cooperation and increased security at work, which contributed to equal care when the same checklist was used (Lannering et al., 2017). In addition, the modified Norton Scale, a risk assessment tool with high sensitivity, low specificity (Park et al., 2016), and satisfactory validity (Šateková et al., 2017), is recommended to prevent and/or taking care of pressure ulcers (Edvinsson et al., 2015; Lannering et al., 2017; Rosengren et al., 2012).

In Sweden, another systematic approach used to prevent care injuries such as pressure ulcers is the Green Cross, a structure that follow-ups on the complications in everyday healthcare situations at the care unit through a risk assessment (Schwarz et al., 2021). To improve the quality of care, first-line managers are crucial as gatekeepers and quality markers to safeguard health care through a satisfied work environment. One suggestion is to include person-centredness, based on the patient's experiences, wishes, resources and abilities, and enable trust and shared decision-making grounded in the patient's narrative. Team workers [staff, patients and relatives] and partnerships should create and document health plans that promote patient safety, health and well-being (GPCC, 2021; Rosengren, 2016). In summary, the risk factors for pressure ulcers are well known. Even though they can prevent pressure ulcers from causing damage, improvements are needed to acknowledge and manage risk factors to help us estimate the risk of developing pressure ulcers. Hence, the aim of this study was to describe and analyse the documentation of pressure ulcers and focused on the medical records from an internal medicine ward in a university hospital in western Sweden.

3 | METHODS

3.1 | Setting

We reviewed the medical records of one medical ward with 24 hospital beds that had treated 798 female and 662 male patients [$n = 1,460$] with ill health such as infections, kidney failure and diabetes. Moreover, around 40 staff members worked in the ward, usually in pairs [RN-AN], and took care of around six patients during the day. However, the number of patients increased during the evenings, nights and weekends. Routines to prevent pressure ulcers, such as risk assessment during the first day after admission and regularly skin inspection, are stressed to prevent suffering and unnecessary hospital stays.

3.2 | Design, sample, and data collection

A descriptive retrospective review (Polit & Beck, 2017) of the medical records was conducted to map the documentation of the pressure

ulcers in a specific ward. The current study included all inpatients [$n = 1,460$, 798 females and 662 males] admitted in a specific ward during the year 2019 [January 1 to December 31]. The same inclusion criteria were used as in the national and yearly point prevalence measurement [PPM] (SALAR, 2020) about care events in the ward, adults [older than 18 years] with documented "plan for skin and tissue" or "plan for wound treatment" Moreover, final notes written by RN, which included the keyword "pressure ulcer," were also included. Therefore, documentation (above inclusive criteria) from 2019 available through the medical records at the university hospital was used. The exclusion criteria were inpatient admissions from other wards at the specific hospital, inpatients who were below the age of 18 and inpatients who had documented care events before and after 2019. Data from 1,458 care events and 691 final notes were included. Furthermore, specific data from the national PPM of the admitted patients [$n = 14$, included in the patient records] on one specific day [March 2019] were also included. Data collection tool variables were assessed with EPUAP form (EPUAP/NPUAP/PPPIA, 2019) and data extraction are performed from nursing care plans [plan for skin and tissue, plan for wound treatment] and summary of nursing care [final notes written by RN] when patient left hospital. The first and second authors [JA, SI] underwent supervision conducted by the last author [KR], a senior researcher who had the overall responsibility for the study.

3.3 | Data analysis

Data were analysed based on risk assessment, label, localization, and categorization of pressure ulcers documented in the medical records (EPUAP/NPUAP/PPPIA, 2019) using descriptive statistics as percentages and ranges (Polit & Beck, 2017). If a final note included the keyword "pressure ulcers" but was registered without a clear description at the time of discharge, data were noted as missing information. Moreover, data from the PPM 2019 were processed and analysed in accordance with the study aim and documentation of the pressure ulcers [medical records and clinical identification/risk assessment]. Descriptive statistics were used to describe and explain the results (Polit & Beck, 2017) according to international classification system [categories 1–4] as follows: (1) includes redness, painful with no fade, no blanchable, pressure and temperature differences between the affected area and surrounding skin; (2) describes pressure ulcers as partial tissue damage, partial thickness loss, open pink-red wound without fibrin coating, bone, tendon or muscle involved; (3) full thickness tissue loss at the location; and (4) involves the bone, tendon or muscle and fibrin, and/or has visible necrosis (EPUAP/NPUAP/PPPIA, 2019). The prevalence of pressure ulcers in the ward at the time of measurement was calculated from both samples [PPM $n = 3/14$, care event $n = 31/1,458$].

3.4 | Ethical considerations

Permission to extract data from the medical record system called Melior was granted by the Head of Department and the Head of the

Care Unit at the current medical department based on the Swedish law that stressed that health professionals were obligated to continuously improve patient safety (Swedish Code of Statutes, 2010). All data analyses were performed by all authors to reduce personal values and followed the routines for scientific work. Ethical considerations were followed throughout the study, such as information, confidentiality to protect personal aspects and utilization to improve high quality of health care (Codex, 2021; Polit & Beck, 2017). The current study used existing documentation [medical records, PPM measurement], which meant that information and voluntary participation could not be attained. However, the study was grounded in scientific soundness, with statistically significant awareness of the ethical considerations throughout the study (Codex, 2021; Swedish Code of Statutes, 2010). All data were unidentified, and each personal social security number was replaced with a random number. Moreover, data were presented at the group level in tabular form; that is, the results were reported without personal identifications. In brief, ethical considerations were given the highest priority when the study was conducted; no approval [ethic review committee/board] was needed due to continuing improvement work (Codex, 2021).

4 | RESULTS

The results are presented in four parts: documentation of the pressure ulcers within the medical records [$N = 1,458$; 797 females, 661 males; $n = 31$; 22 female, 9 male; +80 $n = 20$] admitted in a specific ward during the year 2019 [January 1 to December 31], documentation of the definition and the location of tissue damage [PU = 198], documentation of the pressure ulcers within the final note [$n = 46$] and point prevalence measurement [PPM] of the pressure ulcers [$n = 3$].

4.1 | Documentation of the pressure ulcers within the medical records

Risk assessments of the pressure ulcers were performed [fully/partially completed, during hospitalization] in 68 out of 1,458 care events = hospitalizations [4.7%]. Of these, 31 care plans, for either skin and tissue or wound treatment, which were conducted in 2019 included the words "pressure ulcers" or "bedsores" (Table 1). The results showed a prevalence of 2.1% of all care events [$n = 31/1,458$] in 2019 (Table 1). Most pressure ulcers, 71% [$n = 22/31$], were found among female patients, 2 [6.5% of which] were categorized by RN in line with the EPUAP/NPUAP/PPPIA (2019). Most of the patients with pressure ulcers, 64.5% [$n = 20/31$], were elderly [older than 80 years], and none were younger than 50 years. Moreover, most of the established care plans, 80.6% [$n = 25/31$], were drawn by RN. Of these, 24 [77.4%] of the care plans were documented as "plan for wound treatment," and the rest [7/31 = 22.6%] were documented as "plan for skin and tissue" (Table 1).

TABLE 1 Care plans of the pressure ulcers (n = 31)

Options		Care plan skin		Care plan wound treatment		
		Assistant nurse	Registered nurse	Assistant nurse	Registered nurse	Total
Gender	Female	0	4 (66.7%)	5 (100%)	13 (68.4%)	22 (71%)
	Male	1 (100%)	2 (33.3%)	0	6 (31.6%)	9 (29%)
Total		n = 1	n = 6	n = 5	n = 19	N = 31
Age	50–69	0	1 (16.7%)	0	2 (10.5%)	3 (9.7%)
	70–79	0	2 (33.4%)	1 (20%)	5 (26.3%)	8 (25.8%)
	+80	1 (100%)	3 (50%)	4 (80%)	12 (63.2%)	20 (64.5%)
Total		n = 1	n = 6	n = 5	n = 19	N = 31

TABLE 2 Definitions of the tissue damage documented in the care plans (n = 198)

Description	Care plan skin		Care plan wound treatment		Total
	Assistant nurse	Registered nurse	Assistant nurse	Registered nurse	
Bedsore	1 (8.3%)	6 (15.8%)	6 (16.7%)	30 (26.8%)	n = 43 (21.7%)
Incipient pressure ulcers	4 (33.3%)	3 (7.9%)	0	1 (0.9%)	n = 8 (4%)
Ruddiness	1 (8.3%)	18 (47.4%)	1 (2.8%)	3 (2.7%)	n = 23 (11.6%)
Wounds	3 (25%)	7 (18.4%)	12 (33.3%)	16 (14.3%)	n = 38 (19.2%)
Sores	3 (25%)	1 (2.6%)	3 (8.3%)	1 (0.9%)	n = 8 (4%)
Exuding wounds	0	1 (2.6%)	0	0	n = 1 (0.5%)
Eschars	0	1 (2.6%)	0	1 (0.9%)	n = 2 (1%)
Blisters	0	1 (2.6%)	0	0	n = 1 (0.5%)
Necrotic wounds	0	0	7 (19.4%)	14 (12.5%)	n = 21 (10.6%)
Diabetes ulcers	0	0	0	5 (4.5%)	n = 5 (2.5%)
Chronic foot ulcers	0	0	0	2 (1.8%)	n = 2 (1%)
Venous ulcers	0	0	0	1 (0.9%)	n = 1 (0.5%)
Skin marks	0	0	1 (2.8%)	0	n = 1 (0.5%)
Not defined wounds	0	0	6 (16.7%)	38 (33.9%)	n = 44 (22.2%)
Total	n = 12	n = 38	n = 36	n = 112	N = 198

4.2 | Documentation of the definition and the location of tissue damage

In established care plans [n = 31], 198 cases of tissue damage were documented. Of these, 43 [21.7%] were defined as pressure ulcers, and eight [4.0%] were defined as incipient pressure ulcers (Table 2). The remaining 147 cases [147/198 = 74.2%] lacked definition or were defined with other names or labels. The definition “wound,” without further description, was used in 38 out of 198 cases [19.2%]. Another point, the documentation of the tissue damage in the medical records was described with words such as “mark in the skin” or “fluid wound” instead of the international classification such as redness or partial/full thickness tissue loss. However, 44 out of the 198 [22.2%] lacked definition.

In addition, pressure ulcers were documented in 15 different anatomical sites (Table 3). The most common placement was the sacrum [n = 33/198 = 16.7%], followed by the heel [n = 30/198 = 15.2%], and then the buttocks/rear

[n = 25/198 = 12.6%]. Lesser common placements included tissue damage at the scrotum, groin, back, head, shoulder, and chest. Some RNs used unspecific documentation of the tissue damage, for example, in the back [n = 7/198 = 3.5%]. Furthermore, documentation lacked specific location in four cases [2.0%, plan for skin and tissue], and two out of 198 [1.0%] were described as chronic foot ulcers but were located on body parts other than the foot according to the body text in the specific care plan.

4.3 | Documentation of the pressure ulcers within the final note

A routine at the specific hospital was the documentation of the pressure ulcers in every final note. The RN were obligated to mention pressure ulcers [yes or no] in all final notes when patients were discharged from the ward. The results (Table 4) showed that 691 [47.4%] final notes [n = 1,458, 2019] had the keyword “pressure ulcers,” yes was documented in 46 [6.7%], and no pressure ulcers were

TABLE 3 Location of the skin damage documented in the care plans ($n = 198$).

Localization	Plan for skin and tissue		Wound treatment plan		Total
	Assistant nurse	Registered nurses	Assistant nurse	Registered nurse	
Sacrum	3 (25%)	16 (42.1%)	3 (8.3%)	11 (9.8%)	$n = 33$ (16.7%)
Heel	4 (33.3%)	4 (10.5%)	3 (8.3%)	19 (17%)	$n = 30$ (15.2%)
Buttocks	0	6 (15.8%)	4 (11.1%)	15 (13.4%)	$n = 25$ (12.6%)
Foot/footrest/ankle	0	2 (5.3%)	8 (22.2%)	13 (11.6%)	$n = 23$ (11.6%)
Malleolus	0	0	1 (2.8%)	7 (6.3%)	$n = 8$ (4%)
Hip	0	2 (5.3%)	1 (2.8%)	3 (2.7%)	$n = 6$ (3%)
Spine/squat	0	0	0	7 (6.3%)	$n = 7$ (3.5%)
Toe	1 (8.3%)	0	3 (8.3%)	13 (11.6%)	$n = 17$ (8.6%)
Pouch/scrotum	0	1 (2.6%)	0	2 (1.8%)	$n = 3$ (1.5%)
Arm	0	2 (5.3%)	3 (8.3%)	6 (5.4%)	$n = 11$ (5.6%)
Legs/calves/knees/lower legs/ narrow legs	2 (16.7%)	0	10 (27.8%)	12 (10.7%)	$n = 24$ (12.1%)
Groin	1 (8.3%)	2 (5.3%)	0	0	$n = 3$ (1.5%)
Head, shoulder, chest	0	0	0	4 (3.6%)	$n = 4$ (2%)
Not stated	1 (8.3%)	3 (7.9%)	0	0	$n = 4$ (2%)
Total	$n = 12$ (6%)	$n = 38$ (19.2%)	$n = 36$ (18.2%)	$n = 112$ (56.6%)	$N = 198$

TABLE 4 Registered nurses' documentation of the pressure ulcers at discharged.

Options	Pressure ulcers	Developed during hospitalization
Yes	$n = 46$ (6.7%)	$n = 8/46$ (17.4%)
No	$n = 608$ (88.0%)	
Lack of information	$n = 37$ (5.3%)	
Total	$N = 691$	

filled in at 608 out of the 691 care events [88.0%]. Moreover, documentation in the final notes also described that eight of the patients [8/46 = 17.4%] had pressure ulcers when they were discharged from the ward and had developed these pressure ulcers during their hospital stay, and two patients with pressure ulcers healed during their hospital stay.

4.4 | Point prevalence measurement [PPM] of the pressure ulcers in the ward

Point prevalence measurement of the pressure ulcers was conducted at a specific time [national measurement] in the ward (SALAR, 2020). All inpatients [$n = 14$], six females [42.9%] and eight males [57.1%], mostly elderly [50%+80years], were measured. All patients lack documented risk assessment that should have been carried out during the first day after admission in the ward. However, skin assessment within 24 hr [in the ward or emergency department] was performed in 10 out of 14 patients [71.4%] and showed that four of these patients [28.6%] were at risk of developing pressure ulcers. The prevalence of pressure ulcers in the ward at the time of

measurement was 21.4% [$n = 3/14$], one patient [50–69years] had pressure ulcers category 2, and two patients [older than 80years] had pressure ulcers categories 2 and 4. According to the routine of the registration of pressure ulcers within 24 hr, two out of three patients lacked documentation within the medical records of the pressure ulcers. Moreover, documented risk assessment according to the Modified Norton Scale was performed in two out of three patients with pressure ulcers. None of these patients [$n = 3/14 = 21.4%$] had a documented risk assessment before admission to the ward. One patient developed pressure ulcers during the hospital stay, and no pressure ulcers were caused by the medical equipment in the ward.

5 | DISCUSSION

The aim of this study was to describe and analyse the documentation of pressure ulcers and focused on the medical records from an internal medicine ward in a university hospital in western Sweden. The results showed variation in the prevalence [2.1%–6.7%] of pressure ulcers documented in the medical records [care plans/final notes]. However, the PPM of inpatients in the ward in March 2019 showed a significantly higher prevalence of 21%. Moreover, documentation of all care events in a specific ward during 2019 [for patients older than 18years] also showed a lower number [3.2%] than international [12%] measurements (Li et al., 2020).

Conclusions could be drawn based on what documentation strategies or routines were carried at the ward level. The low percentage in current results may reflect low prevalence but may also indicate a lack of documentation of the pressure ulcers in the ward. This has been demonstrated in other studies (Li, 2016) and is linked to patient safety (Andersson et al., 2018). Improvement due to

routines and quality of content within the documentation process is therefore highlighted to facilitate high-quality care (Swedish Code of Statutes, 2010). Moreover, 68 risk assessments out of the 1,458 care events were conducted, and 94% of the patients [those older than 65 years] in the specific ward received no risk assessment. This was contrary to the national and international recommendations that risk assessments were needed for all patients aged 65 years and older, especially patients at risk (Edvinsson et al., 2015; Lantering et al., 2017; Rosengren et al., 2012). One way to increase the number of risk assessments is to pinpoint one RN at each shift [day, evening] to be responsible for risk assessment within 24 hr [for example, 8 hr after admission], and thereafter conduct care plans for patients at risk of pressure ulcers (Latimer et al., 2019). This suggestion aims to prevent pressure ulcers, a complication [care injury] that can be avoided through systematic improvements which ensures patient safety (WHO, 2020).

Furthermore, our results show a difference in the number of care plans performed by RNs [higher number] in relation to AN [lower number]. The abovementioned professional differences in the documentation of the pressure ulcers show the need for potential improvement involving all team members in nursing with the objective of ensuring patient safety. However, Swedish health care lacks the legal support for AN to document care plans in the medical records. Therefore, national, regional and local routines could be discussed considering the educational perspectives and nursing objectives. Education of staff and patient due to pressure ulcers is one tool to improve health care. Research (Morente et al., 2014) shows the value of e-learning tools as ePULab contributes to effective strategies for education on diagnosis and treatment of pressure ulcers, that is, impact on clinical decision-making which improve quality of health care. Moreover, Al Mutair et al. (2021) highlight that implementation of pressure ulcers prevention programme, PUPP reduce hospital-acquired pressure ulcers via culture of care integration. Another example is use of photographs together with categorization of the same wound to identify pressure ulcers (Ham et al., 2015).

For patient safety (Swedish Code of Statutes, 2010), it seems appropriate that AN document risk assessment and tissue damage/status due to daily caring activities such as personal hygiene, dressing, etc. Staff's responsibility for the documentation in the medical records, for example, to conduct care plans in line with PCC (Ekman et al., 2011; Rosengren, 2016) is not sufficient. Furthermore, other potential reasons for the limited documentation of pressure ulcers in the medical records may include high workload, stress and lack of routines. Therefore, work environments that facilitate teamwork are stressed to prevent and/or reduce pressure ulcers by using resources grounded in partnerships (Ekman et al., 2011; GPCC, 2021; Rosengren, 2016). One successful intervention that has been implemented at several Swedish hospitals is the Green Cross, which uses traffic light [red, yellow, green] to identify risks and patterns in care events, such as pressure ulcers (Schwarz et al., 2021). In addition, research (Kim et al., 2019) stresses that limited participation and experience of systematic preventive work negatively affects self-confidence, and therefore, fear of being blamed for pressure ulcers

arises. This may be an explanation for the limited documentation in the specific ward.

Our results are consistent with a previous study (Børsting et al., 2018; Lavallée et al., 2018) which showed that elderly [those aged 70 years and older] persons were at risk. However, 80.0% of our inpatients who had pressure ulcers were female, which was a higher proportion than in previous studies (Hyun et al., 2019; Kim et al., 2019). However, research has also indicated that there were no differences due to gender (Lichterfeld-Kottner et al., 2020). One explanation could be the lack of documentation among male patients or that female patients in the ward were older. To develop efficient routines for the systematic documentation of pressure ulcers in the medical records, one or two RNs could be responsible for performing regular reviews/audits of inpatient care plans using practical examples. Audits and regular discussion at staff meetings would increase staff's awareness and could result in improved documentation of pressure ulcers and greater data accuracy (D'emeh & Rosengren, 2015; Hansen & Fossum, 2016; Li, 2016; Tubaishat et al., 2015). Furthermore, pressure ulcers and other tissue damage were most common in the sacrum and heel (Zhou et al., 2017), which is why increased awareness of the risk factors is important for managing day-to-day nursing activities. One way is to use the same international classification system namely 1-4 (EPUAP/NPUAP/PPPIA, 2019) within the medical records, to improve systematic documentation. By facilitating teamwork towards common goal about same structure using international classification system, namely 1-4 in the documentation processes, could prevent pressure or friction (Mervis & Phillips, 2019) among patients at risk who use medical equipment (Jaul et al., 2016). Misunderstanding due to the definition and localization of the pressure ulcers could be managed by above systematic and structured documentation (EPUAP/NPUAP/PPPIA, 2019). Uncertainty occurs when unclear descriptions, such as "on the leg," are used, and therefore, staff members need to double-check where the pressure ulcers are located. Moreover, definitions as "liquid" or "redness" exemplify deficient formulations documented in care plans, these adjectives refer to the nature of the wound, not the type, which also increases risk of misinterpretations. Use of the same terminology due to definition and localization (EPUAP/NPUAP/PPPIA, 2019) in care plans would increase patient safety in line with the Swedish law (Swedish Code of Statutes, 2010). In addition, variations in the definitions of tissue damage could explain a seemingly low-pressure ulcers prevalence, and why the "right" prevalence may arise to the same level as reported in other studies (Li et al., 2020; SALAR, 2020) if and when documentation was specified and systematic performed of all patients at risk (EPUAP/NPUAP/PPPIA, 2019). Therefore, health professionals are required to keep medical records to enable team members [patients included] to understand the content of health care.

According to the PPM measurement, 21.4% of the inpatients in the specific ward suffered from pressure ulcers at the time when the PPM was performed, which could be considered as high due to the results of the medical record review [2.1%–3.3%]. However, these results need to be considered with caution because of the limited

number of patients included [3/14 = 21.4%] compared to the review of all care events [$n = 1,458$] documented in the medical records during the year 2019. Considering that half of the patients were elderly [older than 80 years], the results can be considered reasonable compared to that of an earlier study (Gunningberg et al., 2017). However, risk assessment in connection with the PPM showed that patients [not at risk] suffered from pressure ulcers (Díaz-Caro & García Gómez-Heras, 2020), according to the Modified Norton Scale, mostly during the first week of their hospital stay. Therefore, it is important for all staff members to prevent pressure ulcers among patients (Blustein & Javaheri, 2008; Ferguson et al., 2019; Gunningberg et al., 2015; Jackson et al., 2019; Kaşıkçı et al., 2018), in line with professional ethical codes for RN (ICN, 2021) about health and well-being. In summary, systematic use of Green Cross (Schwarz et al., 2021) and simplifying a structured the documentation procedure (Larsson et al., 2019) of medical records (EPUAP/NPUAP/PPPIA, 2019) is highly recommended to prevent pressure ulcers, especially among the elderly (Khor et al., 2014).

5.1 | Limitations

A total sample of all care events [$n = 1,458$] during the year 2019 was included and analysed by a quantitative retrospective review to strengthen the study due to large data collection (Polit & Beck, 2017). However, data collection was carried out in one ward within one university hospital in Sweden. Additionally, a low number of pressure ulcers were documented in the medical records, compared to the national PPM measurement (SALAR, 2020) carried out in the same year. This may influence the credibility and generalizability of our results (Polit & Beck, 2017). Moreover, data collection was based on care events, and not specific patients. Therefore, pressure ulcers could be documented several times which could negatively affect the reliability of our results. According to unsystematic documentation, such as the definition and localization of tissue damage in the medical records [spelling errors included], and limited data [$n = 3/14$] in the PPM measurement (SALAR, 2020), the abovementioned methodological considerations may influence the statistical credibility and generalizability of our results (Polit & Beck, 2017). However, the study used the same national inclusion criteria as the PPM measurement (SALAR, 2020), which resulted in comparable results locally and nationally, and why improvement could be followed over time. Furthermore, final notes showed a high dropout rate [52.7%] lacking the mandatory text "pressure ulcers." This limitation could be partly explained by the fact that some patients died in the ward, and therefore, no final notes were taken. However, the dropout rate was high, and this must be considered when the results are used to improve health care. Finally, results were presented annually. However, monthly or quarterly presentations may visualize patterns or differences in a better way.

All the inpatients who participated in the research were handled with care due to confidentiality [deidentified data] to improve the

quality of health care. No personal data were available, and the results were presented at the group level [percentage] without personal information aimed at reducing pressure ulcers and facilitating patient safety. Therefore, the current study claims that the ethical rules and guidelines (Codex, 2021) for research within humanities and social sciences was followed.

Although the current study shows improvement, for example, uniform and systematic documentation of pressure ulcers, further research is required. Based on the data collected from one ward within one university hospital in Sweden and the low number of pressure ulcers documented in medical records, it is necessary to elucidate the underlying causes of the current results by further studies within the area. For example, a qualitative perspective from interviews with patients, relatives and/or team members could elaborate the phenomena of preventable ill health, such as pressure ulcers. This might help people understand what pressure ulcers are and how they affect the patients and relatives in everyday life situations, along with the staff in a work environment within health care.

6 | CONCLUSIONS

The results showed variation in the prevalence [2%–21%] of pressure ulcers documented in the medical records and one day's measurement, [PPM], resulted in lower number [3.2%] than international [12%] measurements (Li et al., 2020). Education [staff, patients, relatives] is one way to sustain a decrease of pressure ulcers via culture of care integration. A uniform documentation drawn by the entire team across professional boundaries within medical records facilitates high-quality healthcare delivery, such as preventing pressure ulcers. Health professionals, such as nurses, need to define and locate tissue damage and systematically categorize the pressure ulcers in an early stage using risk assessments within 24 hr of admission to healthcare settings. By improving practices, such as by using Green Cross as a tool for continuous improvement, risk assessment within 8 hr of arrival and continuous skin assessment during hospital stay can be implemented. Routines and guidelines should be redeveloped so that all staff members [RN, AN] document care plans within medical records. Regular personal meetings with pinpointed responsible staff members at each work shift, and thereafter follow-up processes, could implement regular learning activities on a daily basis and increase awareness of preventable care injuries, such as pressure ulcers. These updated routines may hopefully results in improved health and well-being due to decrease of pressure ulcers at the ward level.

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CONFLICT OF INTEREST

The authors declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

DATA AVAILABILITY STATEMENT

Author elects to not share data. Research data are not shared.

ETHICS STATEMENTS

No ethical approval due to Swedish law that stressed that health professionals were obligated to continuously improve patient safety (Swedish Code of Statutes, 2010, 2017). All data analyses were performed by all authors to reduce personal values and followed the routines for scientific work. Ethical considerations were followed throughout the study, such as information, confidentiality to protect personal aspects and utilization to improve high quality of health care (Codex, 2021; Polit & Beck, 2017).

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