

## PATIENT CLASSIFICATION SYSTEM: A PROPOSAL TO COMPLEMENT THE INSTRUMENT BY FUGULIN ET AL.

Fernanda dos Santos<sup>1</sup>  
Noemi Marisa Brunet Rogenski<sup>2</sup>  
Cleide Maria Caetano Baptista<sup>3</sup>  
Fernanda Maria Togeiro Fugulin<sup>4</sup>

Santos F, Rogenski NMB, Baptista CMC, Fugulin FMT. Patient classification system: a proposal to complement the instrument by Fugulin et al. Rev Latino-am Enfermagem 2007 setembro-outubro; 15(5):980-5.

*Analysis of patient classification instruments available in the literature shows that many significant aspects related to the assistance to patients with wounds are not approached, evidencing the importance to elaborate criteria to assess these patients. This study proposes the development of new areas of care to complement the Fugulin et al. instrument, validated by the Federal Nursing Council (COFEN). The construction of new areas to evaluate wounds was based on a bibliographic search on the operational models of the Patient Classification System (PCS), as well as on several instruments of wound classification. New areas of care were established, as follows: tissue impairment, number of dressing changes and time taken to their preparation. Values were also redefined indicating the patient's assistance category. The complementation of the Fugulin et al. instrument, proposed here, favors the application of this instrument in a more diversified group of patients since it adds a relevant assistance aspect, as the dressing issue.*

**DESCRIPTORS:** *personnel administration; hospital; nursing; team; time management; wound healing*

## SISTEMA DE CLASIFICACIÓN DE PACIENTES: PROPUESTA DE COMPLEMENTACIÓN DEL INSTRUMENTO FUGULIN ET AL.

*El análisis de los instrumentos de clasificación de pacientes, disponibles en la literatura, demuestra que aspectos relevantes de la atención a pacientes portadores de herida dejan de ser discutidos, dejando evidente la importancia de elaborar criterios que posibiliten evaluar estos pacientes. Este estudio propone la elaboración de criterios que posibiliten evaluar estos pacientes, y también la elaboración de áreas de cuidados de manera a complementar el instrumento de Fugulin et al., validado por el Consejo Federal de Enfermería (COFEN), que no contempla este aspecto. La construcción de las áreas de cuidados para evaluación de heridas se fundamentó en un levantamiento bibliográfico sobre los modelos operacionales del Sistema de Clasificación de Pacientes (SCP), bien como sobre los distintos instrumentos de clasificación de heridas. Fueron configuradas como nuevas áreas de cuidado: el comprometimiento del tejido, el número de cambios del curativo y el tiempo utilizado para su realización. Aún fueron redefinidos los valores que indican la categoría asistencial del paciente. La complementación del instrumento Fugulin et al., propuesta en este estudio, favorece la aplicación del instrumento a un grupo más diversificado, por agregar un aspecto relevante de atención que es la cuestión de los curativos.*

**DESCRIPTORES:** *administración de personal en hospitales; grupo de enfermería; administración del tiempo; cicatrización de heridas*

## SISTEMA DE CLASSIFICAÇÃO DE PACIENTES: PROPOSTA DE COMPLEMENTAÇÃO DO INSTRUMENTO DE FUGULIN ET AL.

*A análise dos instrumentos de classificação de pacientes, disponíveis na literatura, demonstra que aspectos relevantes da assistência a pacientes portadores de feridas deixam de ser abordados, ficando evidente a importância da elaboração de critérios que possibilitem avaliar esses pacientes. Este estudo propõe a elaboração de áreas de cuidados de forma que complemente o instrumento de Fugulin et al., referendado pelo Conselho Federal de Enfermagem (COFEN) do Brasil, que não contempla esse aspecto. A construção das áreas de cuidados para avaliação de feridas fundamentou-se em busca bibliográfica acerca de modelos operacionais de Sistema de Classificação de Pacientes (SCP), bem como sobre os diversos instrumentos de classificação de feridas. Configuraram-se como novas áreas de cuidado: o comprometimento tecidual, o número de trocas do curativo e o tempo utilizado para a sua realização. Foram redefinidos, ainda, os valores que indicam a categoria assistencial do paciente. A complementação do instrumento de Fugulin et al., proposta neste estudo, favorece a aplicação do instrumento a um grupo mais diversificado de pacientes por acrescentar aspecto relevante da assistência, como a questão dos curativos.*

**DESCRIPTORES:** *administração de recursos humanos em hospitais; equipe de enfermagem; gerenciamento do tempo; cicatrização de feridas*

<sup>1</sup> Nurse at the Intensive Therapy Unit, Heart Institute, Medical School; <sup>2</sup> Estomatherapist nurse, Sc.M. in Nursing, Surgical Nursing Division of the School Hospital Director; <sup>3</sup> Estomatherapist nurse, Sc.M. in Nursing, Head of the Surgical Clinical Unit of the School Hospital; <sup>4</sup> Nurse, Professor, School of Nursing, Brazil. e-mail: ffugulin@usp.br. University of São Paulo

## INTRODUCTION

*P*atients' classification in accordance with their level of dependence on the nursing team is one of the steps in staff dimensioning methods which, due to its implications, has become a source of constant concern, discussion and research among nurses, who are interested in producing high-quality services with a view to attending to clients' needs.

Gaidzinski's<sup>(1)</sup> nursing staff dimensioning method indicates the identification of the following variables for its application: work load at the unit; technical security ratio and actual work time. The work load of the nursing care unit is the product of the mean daily quantity of attended patients, according to their degree of dependence on the nursing team, and the mean nursing care time used per patient, according to the presented degree of dependence<sup>(2)</sup>.

In order to identify the mean quantity of attended patients, according to their degree of dependence on the nursing team, patients need to be classified in terms of their dependence on this team, using one of the Patient Classification Systems (PCS) available in literature which best attends the clients' characteristics.

The PCS can be understood as a way of determining a patient's degree of dependence on the nursing team, with a view to establishing the time spent on direct and indirect care, as well as the number of staff to attend to the patient's bio-psycho-social-spiritual needs<sup>(3)</sup>.

Considered an essential instrument in nursing management practice, the PCS also provides information for decision-making about human resource allocation, productivity and nursing care cost monitoring<sup>(4)</sup>, as well as for service organization and nursing care planning. Knowledge about patients' care profile is another factor that can support the planning and implementation of care programs that can best attend to these clients' needs, helping in daily nursing human resource distribution and training to attend to each patient group<sup>(5)</sup>.

Despite the number of patient classification instruments available in Brazilian literature, it is observed in practice that nurses are more concerned with the elaboration of new than with the applicability of existing instruments.

The main motives appointed for this fact refer to the allegation that patient classification systems are influenced by operational aspects, medical practices and care standards characteristic of each institution.

The Federal Nursing Council (COFEN), through Resolution No 293/04<sup>(6)</sup>, which establishes official parameters for nursing staff dimensioning, ratified the PCS by Fugulin et al.<sup>(7)</sup>. Based on this classification, the COFEN indicated the minimum number of care hours and, also, the percentage distribution of nursing professionals for each type of care.

Thus PCS<sup>(7)</sup>, developed and implanted at the Medical Clinic Unit of the University Hospital at the University of São Paulo, was applied at this institution's other hospitalization units, observing that it does not fully attend to pediatric patient characteristics and does not apply to infants. At the surgical units, according to the study author<sup>(8)</sup>, the nurses indicated that they felt a lack of parameters that would make it possible to assess patients' different kinds of injuries, which interfere in and determine daily care, at different care levels, at the moment wound dressing is performed.

Wound care has always been a source of great discussion among nurses and these professionals' concern with the care to be delivered to these patients goes back a long way. Among health team members, nurses are the professionals most intimately involved with care delivery to patients with injuries, and have also directed and implemented this care in practice<sup>(9)</sup>.

Literature presents countless concepts and ways of classifying wounds. Generically, wounds can be defined as a rupture in the body's normal anatomic and functional structures, which leads to the impairment of the tissular physiological function, resulting in a loss of its integrity.

Classifying wounds helps to systematically register their characteristics, permits planning treatment strategies, accompanying their efficacy, predicting results and facilitating the communication between the professionals involved in care<sup>(9)</sup>.

However, the analysis of patient classification instruments available in literature shows that relevant aspects of care delivery to injured patients are not addressed, which evidences the importance of criteria that allow for the assessment of these peculiarities.

The need to perform extensive wound dressing can demand direct care time that is not compatible with the estimated time for the patient's care category, obtained by applying the classification instruments that do not cover the realization of this procedure, interfering in the planning of the number of staff needed to attend the patients and, consequently, in the quality of care delivery.

In view of this problem and considering that the instrument<sup>(7)</sup> ratified by the COFEN does not fully attend to the needs of surgical patients and/or patients with injuries, we decided to perform this study, which aims to:

## OBJECTIVES

### General Objective

- Complement the patient classification instrument by Fugulin et al.<sup>(7)</sup>, indicating parameters for the classification of patients' different kinds of injuries.

### Specific Objectives

- Construct care areas that allow for the assessment of patients' different kinds of injuries, according to the level of dependence on the nursing team.
- Attribute weights to each nursing dependence level, related to the new proposed care areas.
- Redefine the sum of the values that indicate the patients' care category.

## METHOD

The construction of care areas for wound assessment was based on a bibliographic review in indexed databases (Dedalus and Medline), related to the last ten years, using the terms *sistema de classificação de pacientes* and *enfermagem*, patient and classification and system and nursing, *feridas* and wound.

The Dedalus database, made available by the University of São Paulo (USP) Library System, permitted access to 138 bibliographic references through the term *feridas* and 22 when using the words *sistema de classificação de pacientes* and *enfermagem*. The instrument made available by the Virtual Health Library (BVS), called BIREME, allowed

for the search in the Medline database and identified 245 references when using the words patient and classification and system and nursing and 28992 through the term wound. In view of the number of references found through the term wound, the research was refined in the Medline database, using the words wound and classification, whose search resulted in the identification of 363 references.

The obtained bibliographic references were selected by means of the title. Of the references found in Dedalus, thirteen were analyzed, related to the term *feridas* and six related to the words *sistema de classificação de pacientes* and *enfermagem*. In Medline, 21 references were analyzed of those obtained by using the term *wound* and *classification* and 23 of those identified by using the words patient and classification and system and nursing.

The bibliographic references that were analyzed made it possible to identify, select and assess the operational PCS models<sup>(5,7,10)</sup>, as well as the assessment instruments and wound classifications that are currently used in hospital practice. After this assessment, the aim was to elaborate the new care areas, to describe the different levels of dependence on the nursing team patients could present in each area and to redefine the values that indicate the patient's care category in the instrument by Fugulin et al.<sup>(7)</sup>.

To propose the new care areas, the main aspects were chosen that are considered in care delivery to patients with injuries, attributing four care dependence or complexity situations to each area, which were ranked from one to four, so as to represent the increasing complexity of care and the required nursing care time.

## RESULTS

Among the aspects considered in care delivery to patients with injuries, which can interfere in care complexity and nursing care time planning, the following were chosen: tissue impairment, frequency of and time required for wound dressing within 24 hours.

### Tissue impairment

Wound staging based on tissue impairment allows for the anatomic description of the involved

tissue layers and grants greater objectivity and uniformity to the information obtained through its assessment.

Similarly to other kinds of injuries, pressure ulcers can be classified and assessed in different ways. However, in 1989, the National Pressure Ulcer Advisory Panel (NPUAP) established a staging based on tissue impairment, which the Agency for Health Care Policy and Research (AHCPR) recommended in 1992 to identify and classify these injuries, which permitted uniform information for universal use<sup>(16)</sup>.

Although directed at pressure ulcers, this classification by the NPUAP<sup>(11-12)</sup> can be applied to other types of injuries. Thus, in this research, this classification was chosen to construct the indicator, in combination with characteristics that were not addressed in the classification proposed by the NPUAP, such as the presence of drains or ostomies for example.

The care area was defined as follows

- Cutaneous-mucous integrity/tissue impairment

1. Intact skin.
2. Presence of skin color alteration (bruise, hyperemia) and/or presence of continuity solution in the skin, involving the epidermis, dermis or both.
3. Presence of continuity solution in the skin, involving subcutaneous tissue and muscle. Surgical incision. Ostomies. Drains.
4. Presence of continuity solution in the skin with destruction of the dermis, epidermis, muscles and impairment of other skin structures, such as tendons and capsules. Eviscerations.

Frequency of dressing changes

The main objective of a dressing is to favor the scarring process. Thus, the choice of topical therapy for wound treatment must be based on clinical wound characteristics and on the scarring phase the wound has reached<sup>(17)</sup>.

Likewise, the periodicity of dressing changes must be based on the quantity and characteristics of the exudate present in the wound bed and on the type of dressing used for its treatment.

Some dressings can be changed every three or five days. Others can remain on the wound bed for up to seven days. However, simple dressings, which are predominant in a large majority of hospital

institutions, needs to be changed at least once a day, due to the characteristic itself of the material that is used.

Simple dressings (gauze and adhesive tape) have a limited absorption capacity. The exudate surplus can retard cell growth and prolong the inflammatory phase, turning the formation of granulation tissue more difficult, besides increasing the risk of alterations in skin PH, favoring the irritation and maceration of the peri-injured skin. Therefore, considering the above described aspects, the number of dressing changes was associated with the patient's greater dependence on the nursing team, proposing the following care area:

- Dressings

1. Patient does not perform dressing or cleaning of the wound/surgical incision during bathing;
2. Dressing performed once a day by the nursing team;
3. Dressing performed 2 times per day by the nursing team;
4. Dressing performed more than 3 times per day by the nursing team.

Time used for wound dressing

The time used for wound dressing is closely related with the injury's degree of impairment, the professional's ability to perform the technique and the reaction or collaboration of the patient submitted to the procedure<sup>(18)</sup>.

The time intervals established in this care area were determined empirically, based on experience and on the time spent to apply the dressings.

- Mean time used for wound dressing

1. No dressing.
2. Between 5 and 15 minutes.
3. Between 15 and 30 minutes.
4. More than 30 minutes.

The final proposal to complement the patient classification instrument<sup>(7)</sup> is represented in Table 1. The care areas cutaneous-mucous integrity/tissue impairment; dressing and time used for wound dressing complemented the initial instrument.

Table 1 - Patient classification instrument by Fugulin et al.<sup>(7)</sup>, complemented with care areas to assess patients with injuries. São Paulo, SP, 2006

Care Area	Care complexity ranking			
	4	3	2	1
Mental State	Unconscious.	Periods of unconsciousness.	Periods of disorientation in time and space.	Orientation in time and space.
Oxygenation	Mechanical ventilation (use of pressure or volume ventilator).	Continuous use of mask or oxygen catheter.	Intermittent use of mask or oxygen catheter.	Not depending on oxygen.
Vital Signs	Control in intervals of two hours or less.	Control in four-hour intervals.	Control in six-hour intervals.	Routine control (eight hours).
Motility	Incapable of moving any body segment.	Difficulty to move body segments. Change in decubitus and passive movements helped by nursing.	Limited movements.	Moves all body segments.
Walking	Restricted to bed.	Locomotion using a wheelchair.	Needs help to walk.	Walking.
Feeding	Through central catheter.	Through nasogastric tube.	Oral with help.	Self-sufficient.
Body Care	Bed wash, oral hygiene performed by nursing.	Shower and oral hygiene performed by nursing.	Help for shower and/or oral hygiene.	Self-sufficient.
Elimination	Evacuation in bed and use of urethral catheter to control diuresis.	Use of bed pan or eliminations in bed.	Toilet use with help.	Self-sufficient.
Therapeutic	Use of vasoactive drugs to maintain BP.	Continuous E.V or through nasogastric tube.	Intermittent E.V.	IM. or oral route.
Cutaneous-Mucous integrity/Tissue Impairment*	Presence of continuity solution in the skin with destruction of the dermis, epidermis, muscles and impairment of other skin structures, such as tendons and capsules. Eviscerations.	Presence of continuity solution in the skin, involving subcutaneous tissue and muscle. Surgical incision. Ostomies. Drains.	Presence of skin color alteration (bruise, hyperemia) and/or presence of continuity solution in the skin, involving the epidermis, dermis or both.	Intact skin.
Dressing*	Dressing performed more than 3 times per day by the nursing team.	Dressing performed 2 times per day by the nursing team.	Dressing performed once a day by the nursing team.	Patient does not perform dressing or cleaning of the wound/surgical incision during bathing.
Time used for wound dressing*	More than 30 minutes.	Between 15 and 30 minutes.	Between 5 and 15 minutes.	No wound dressing or cleaning during bathing.

The sum of the values that indicate the patients' care category was redefined as follows:

Table 2 - Score corresponding to the care categories defined by Fugulin et al.<sup>(7)</sup>, obtained through the application of the instrument complemented with care areas to assess patients with injuries. São Paulo, SP, 2006

Care category	Score
Intensive care	More than 34
Semi-Intensive care	29-34
Highly dependent care	23-28
Intermediary care	18-22
Minimal care	12-17

## CONCLUSION

This study allowed for the identification and proposition of new care areas, which reflect the

characteristics of patients with injuries, complementing the patient classification instrument by Fugulin et al.<sup>(7)</sup>.

This proposal makes it possible to apply the instrument to a more diversified group of patients, because it adds a relevant aspect of care, such as dressings.

The focus is not to test or monitor the reliability or validity of the instrument<sup>(7)</sup>, but to complement it and contribute in some way to revert the current scenario, mainly at surgical units, with respect to the availability of patient classification instruments that contemplate the characteristics of their clientele. Future research will test the instrument and apply it as a management tool capable of supporting the dimensioning and allocation of human resources at these units.

## REFERENCES

- Gaidzinski RR. Dimensionamento de pessoal de enfermagem em instituições hospitalares. [tese]. São Paulo (SP): Escola de Enfermagem/USP; 1998.
- Gaidzinski RR, Fugulin FMT, Castilho V. Dimensionamento de pessoal de enfermagem em instituições de saúde. In: Kurcgant P, coordenadora. Gerenciamento em enfermagem. Rio de Janeiro (RJ): Guanabara Koogan; 2005. p. 125-37.

- Gaidzinski RR. O dimensionamento do pessoal de enfermagem segundo a percepção de enfermeiras que vivenciam esta prática. [tese]. São Paulo (SP): Escola de Enfermagem/USP; 1994.
- De Groot HÁ. Patient classification system evaluation. Part 2: System selection implementation. J Nurs Adm 1989 July-August; 19(7): 24-30.
- Fugulin FMT, Gaidzinski RR, Kurcgant P. Sistema de classificação de pacientes: identificação do perfil assistencial dos pacientes das unidades de internação do HU-USP. Rev Latino-am Enfermagem 2005 janeiro-fevereiro; 13(1):72-8.

6. Conselho Regional de Enfermagem [Página na internet]. São Paulo: Conselho Federal de Enfermagem; [Acesso em 2004 novembro 14]. Resolução nº 293/04. Fixa e estabelece parâmetros para dimensionamento do quadro de profissionais de enfermagem nas instituições de saúde. Disponível em: <http://www.corensp.org.br/resolucao293.htm>
7. Fugulin FMT, Silva SHS, Shimizu HE, Campos FPF. Implantação do Sistema de Classificação de pacientes na unidade de Clínica médica do Hospital Universitário da Universidade de São Paulo. *Rev Med HU-USP* 1994; 4(1/2): 63-8.
8. Fugulin FMT. Dimensionamento de pessoal de enfermagem: avaliação do quadro de pessoal das unidades de internação de um hospital de ensino. [tese]. São Paulo (SP): Escola de Enfermagem/USP; 2002.
9. Poletti NAA. O cuidado de enfermagem a pacientes com feridas crônicas: a busca de evidências para a prática. [dissertação]. Ribeirão Preto (SP): Escola de Enfermagem de Ribeirão Preto/USP; 2000.
10. Perroca MG. Sistema de classificação de paciente: construção e validação de um instrumento. [tese]. São Paulo (SP): Escola de Enfermagem/USP; 1996.
11. National Pressure Ulcer Advisory Panel. Pressure ulcer prevalence, cost and risk assessment: consensus development conference statement. *Decubitus* 1989; 2(2): 24-8.
12. National Pressure Ulcer Advisory Panel. Stage I assessment in darkly pigmented skin [on line] [cited 2000 Nov 19]. Available from: <http://www.nuap.org/positn4.htm>
13. Frantz RA, Gardner S. Elderly skin care: principles of chronic wound care. *J Gerontol Nurs* 1994 September; 20(9): 35-44.
14. Lavery LA, Armstrong DG, Harkless LB. Classification of diabetic foot wounds. *Ostomy Wound Manage* 1997 March; 43(2): 44-8, 50, 52-3.
15. van Rijswijk L. Issues in chronic wound care: where do we go from here? *Ostomy Wound Manage* 1996 November-December; 42(10A Suppl): 70S-72S.
16. Sussman C, Bates-Jensen B. Wound care: a collaborative practice manual for physical therapists and nurses. Gaithersburg: Aspen Publisher; 1998.
17. Meneghin P, Soares L. Avanços em curativos. In: Fernandes AT. Infecção hospitalar e suas interfaces na área da saúde. São Paulo (SP): Atheneu; 2000. p. 998-1007.
18. Baptista CMC, Castilho V. Levantamento do custo direto do procedimento com bota de unha em pacientes com úlcera venosa. [dissertação]. São Paulo (SP): Escola de Enfermagem/USP; 2002.