

THE IMPORTANCE OF NURSES IN EVALUATING TECHNOLOGIES FOR WOUND CARE**LA IMPORTANCIA DEL ENFERMERO EN LA EVALUACIÓN DE TECNOLOGÍAS PARA EL CUIDADO DE HERIDAS****A IMPORTÂNCIA DO ENFERMEIRO NA AVALIAÇÃO DE TECNOLOGIAS PARA O CUIDADO DE FERIDAS COMPLEXAS**¹**Raquel de Souza Soares**²**Patricia dos Santos Claro Fuly**

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mail: quel_fenf@yahoo.com.br.**Submission:** 11-03-2025**Approval:** 01-04-2025**ABSTRACT**

Objective: To reflect on the importance of nurses in health economic evaluations of technologies aimed at treating complex wounds. Method: Reflective study based on a literature review carried out in February 2025, in the PubMed and LILACS databases, which sought to answer the question: "How important is the nurse in the economic evaluations of technologies aimed at caring for complex wounds?" Results: reflection was made on the methodologies of economic evaluations in health, in the context of care for complex wounds, highlighting the specificity of outcomes and types of costs and the role of the nurse, as the protagonist of health technology evaluations. Final considerations: The nurse is a professional who has the necessary qualifications to conduct economic evaluations, especially when the technologies evaluated are aimed at the care of complex wounds. Therefore, it is necessary to widely disseminate this topic in the training of professionals in the area at both undergraduate and postgraduate levels.

Keywords: Technology, Technology Assessment, Biomedical, Health Evaluation, Wounds and Injuries.

RESUMEN

Objetivo: Reflexionar sobre la importancia del enfermero en las evaluaciones económicas en salud de tecnologías destinadas al tratamiento de heridas complejas. Método: Estudio reflexivo a partir de una revisión de la literatura realizada en febrero de 2025, en las bases de datos PubMed y LILACS, que buscó responder a la pregunta: "¿Qué importancia tiene el enfermero en las evaluaciones económicas de tecnologías destinadas al cuidado de heridas complejas?" Resultados: se reflexionó sobre las metodologías de evaluaciones económicas en salud, en el contexto de la atención a heridas complejas, destacando la especificidad de los resultados y tipos de costos y el papel del enfermero, como protagonista de las evaluaciones de tecnologías en salud. Consideraciones finales: El enfermero es un profesional que cuenta con la calificación necesaria para realizar evaluaciones económicas, especialmente cuando las tecnologías evaluadas están dirigidas al cuidado de heridas complejas. Por lo que es necesario difundir ampliamente este tema en la formación de profesionales del área tanto a nivel de pregrado como de posgrado.

Palabras clave: Tecnología, Evaluación de la Tecnología Biomédica, Evaluación en Salud, Heridas y Lesiones.

RESUMO

Objetivo: Refletir sobre a importância do enfermeiro nas avaliações econômicas em saúde de tecnologias voltadas para tratamento de feridas complexas. Método: Estudo reflexivo baseado em revisão de literatura realizada em fevereiro de 2025, nas bases de dados PubMed e LILACS que buscou responder à questão: "Qual a importância do enfermeiro nas avaliações econômicas das tecnologias voltadas para o cuidado às feridas complexas?" Resultados: refletiu-se sobre as metodologias das avaliações econômicas em saúde, no contexto dos cuidados às feridas complexas, ressaltando a especificidade dos desfechos e tipos de custos e o papel do enfermeiro, como protagonista das avaliações de tecnologia em saúde. Considerações finais: O enfermeiro é um profissional que possui a qualificação necessária para conduzir avaliações econômicas, principalmente quando as tecnologias avaliadas são voltadas para o cuidado de feridas complexas. Assim, faz necessário a divulgação ampla desse tema, na formação dos profissionais da área tanto na graduação quanto na pós-graduação.

Palavras-chave: Tecnologia, Avaliação da Tecnologia Biomédica, Avaliação em Saúde, Ferimentos e Lesões



INTRODUCTION

The term health technology encompasses the set of knowledge and skills organized to promote health. Thus, it has a very broad scope, including: devices, medications, vaccines or procedures. New technologies in dressings and equipment are increasingly appearing on the market for the treatment of patients with chronic wounds. Despite the many options available, economic aspects must also be taken into account when prescribing products, always considering costs and benefits.¹⁻²

Wounds are caused by the breakdown of skin integrity, causing imbalances that harm the health of patients. Complex wounds are injuries that do not heal in the expected time, requiring more delicate and specialized treatment. Studies indicate that approximately 25% of the Brazilian population will develop wounds that are difficult to heal.³

The formation of difficult-to-treat skin lesions is associated with several factors such as: vascular impairment, systemic arterial hypertension, cancer, immobility or nutritional disorders. The impact on patients of a wound that does not heal goes beyond the physical aspect, but also affects their psychological and social context.⁴

More and more products and devices are being placed on the market for treating wounds. All of these new technologies present different costs and implications for nursing care. Therefore, nurses, as professionals who care for

patients with wounds, with the technical and scientific knowledge to prescribe dressings and technologies, must also be included in the process of assessing costs and their applications within the Unified Health System.⁵

All health technology must be subject to an assessment. Economic assessments are an important tool in decision-making regarding the use of health resources, increasing the quality, efficiency and effectiveness of services. In economic assessment studies for new technologies, the cost factor is considered in decision-making, along with the analysis of technical variables such as effectiveness and benefit, for example.⁶

In addition to scientific knowledge about pathophysiology, nurses must also consider individual socioeconomic conditions to prescribe appropriate treatment in order to properly plan interventions. The adequacy of dressing prescriptions goes beyond the assessment of the wound, but also involves the entire social context surrounding the patient. And for institutions, given the reality of scarce resources in the Unified Health System, economic assessments contribute to efficient financial management.

Considering a scenario in which new technologies for wound care are constantly emerging, with different indications and different costs, nurses must also be included in the economic assessment processes. To this end, this theoretical production aims to reflect on the importance of nurses in economic assessments in



health of technologies aimed at treating complex wounds.

METHODS

This is a theoretical-reflective article that seeks to answer the following research question: “What is the importance of nurses in the economic evaluations of technologies aimed at the care of complex wounds?” To address this question, a review of national and international scientific literature was conducted in February 2025, in the electronic databases PubMed and LILACS. To select the descriptors used, a query was made to the Health Sciences Descriptors (DeCS): cost-effectiveness analysis and nursing MESH: wound and lesion and cost effectiveness and nursing.

The inclusion criteria were: articles addressing the themes of economic costs in health and chronic wounds, published between 2015 and 2025, in Portuguese, English and Spanish. Publications with themes unrelated to economic costs in health, wounds and nursing were excluded.

Considering these criteria, 6 articles were selected and the technical manuals of the Ministry of Health that address the theme and dictate the guidelines for evaluating new technologies were included. After reading and critically analyzing the material, reflections were made on the importance of nurses in economic analysis in health, focused on nursing care for patients with wounds.

RESULTS AND DISCUSSION

1) Economic evaluation techniques in health and wounds:

The treatment of complex wounds has a major impact on health costs. Given the many technologies available, it is necessary to economically evaluate the cost for each type of injury. The most common types of wounds are: pressure ulcers, diabetic ulcers and vasculogenic ulcers. The objective of applying new technologies is to optimize wound healing, improving quality of life, reducing morbidity and mortality and decreasing hospitalization.⁵

All new technology to be implemented in the unified health system must be subjected to an economic evaluation. As more and more coverage and innovations in the wound care sector have been reaching the market, it is important to associate economic studies in order to measure the impacts of innovations.⁶. Mainly due to the scarcity of resources within the unified health system in Brazil. Therefore, concomitantly with the selection of the applied coverages, it is recommended that an economic study be carried out to observe the comparative costs and the desired outcomes.

Health outcomes are considered the impact of a given intervention on a specific population. Simply put, they are the desired or expected results. The outcomes most related to chronic wounds assessed by nurses are clinical outcomes. The most desired clinical outcomes are: total or partial healing, reduction in lesion



size and depth, infection control, reduction in exudate and local pain.^{1,7}

After this definition, the types of costs that will be assessed are determined. The costs normally used are direct material costs and human resources. Material costs are related to the value of the entire product, covering or equipment applied to the treatment of the wound. When assessing the cost of the material, everything that will be used for the dressing must be considered: the solutions used for cleaning, the amount of gauze, the primary covering, bandages, films for each day of the patient's treatment. All of this material must be recorded based on the units used, with a monetary value for each item.⁷

Costs related to human resources are measured based on the analysis of the nurse's remuneration, always divided by the time spent in minutes to apply the dressings. In clinical practice, each dressing takes a different amount of time to be applied; this time must be measured for each patient, including from the assessment to the end of the procedure.^{7,8}

Once this data is clear, it is possible to organize the economic evaluation method that will be used for the coverage that will be implemented. Economic evaluation encompasses four types of study: cost-effectiveness, cost-minimization, cost-utility, and cost-benefit.¹ As shown in the table below:

Types of economic evaluation in health¹. Rio de Janeiro (RJ). 2025

Types of Economic Evaluation	Concept
Cost-effectiveness	It is a type of economic evaluation that compares different health interventions, whose costs are expressed in monetary units and the effects, in clinical-epidemiological units.
Cost-minimization	This is a particular case of cost-effectiveness studies, whose compared interventions can be considered equivalent.
Cost-benefit	In this assessment, resource consumption will be measured in terms of health benefits in monetary units, with the resulting value being a net financial benefit.
Cost-utility	It is defined as analysis relating the measure by the unit of benefit becomes the "utility", which consists of a combined measure of benefits in life time and quality of life.

It should also be noted that, regardless of the analysis selected, there will be a comparison

of therapeutic alternatives. The new technology implemented should preferably be compared to a

conventional treatment. Thus, a comparison of outcomes and costs can be established, with the aim of demonstrating which is the best therapeutic option for that particular population or institution.⁸

2) The importance of economic assessments conducted by nurses

Within the context of wound care, the nurse is the professional qualified and trained to practice care in all cases of greater technical complexity or that require theoretical and scientific knowledge, with the capacity for autonomy to make decisions. Thus, the nurse's duties regarding wound care include classifying wounds, applying dressings, and coordinating and supervising the nursing team in prevention. As the nurse is the professional who performs and delivers technically complex nursing care related to wounds, it is also his/her responsibility to select technologies to use in dressings, such as coverings and equipment, for example.⁹⁻¹⁰

The nurse's leading role in the decision-making process for selecting technologies related to wound care is also important. And this process will always involve an economic assessment, so that any purchase can be made. Economic studies are activities that can be performed by nurses, based on the perspective of those who are involved in the care process and have extensive experience in providing care to patients with wounds.¹¹

The nurse's assessment goes beyond the injury that compromises the patient, but also

encompasses the entire social, psychological and spiritual context. This differentiated assessment allows the nurse to see that the efficiency of the treatment will also depend on the correct allocation of financial resources, so that materials are not lacking during the course of the treatment.¹²

The nurse's work is a valuable contribution to economic analysis, within the area of wound care, which increasingly allocates new resources and equipment, reflecting the increase in health spending. Currently, technologies in equipment such as laser therapy, negative pressure therapies, ultrasound debridement equipment and platelet-rich plasma are considered to be high-cost. This assessment is based on the premise of looking at the cost of the equipment itself and the operational cost. This limited view of technological resources, without assessing the benefits, leads to many negative requests for equipment purchases.^{11,13-15}

This happens because economic analysis cannot be linked only to cost; it must always be associated with measures of clinical benefit to the patient. Therefore, it is important for nurses to conduct economic analyses that measure the cost compared to the clinical benefit to the patient and the unit. This scientific demonstration will support and subsidize requests for material purchases.

It is observed that cost-effectiveness assessments can obtain good results in the evaluations of dressings and equipment used in chronic wounds. Different dressings can be



evaluated by this economic evaluation method, from the most well-known dressings, such as hydrogel, comparing different concentrations, to more complex treatments, such as the use of Platelet-Rich Plasma.¹⁴⁻¹⁵

Cost-effectiveness analysis studies legitimize the implementation of these new dressing technologies through economic analysis. Cost-effectiveness analysis is an important technical tool for both the healthcare team and management, as it can demonstrate how resources can be allocated more assertively.

In addition, the analysis method that accompanies cost-effectiveness can be randomized clinical trials, developed by nurses, or systematic literature reviews can also be used.¹ As in clinical practice, the outcomes, that is, the desired results are clinical, such as infection control or healing rate, with a well-defined follow-up period such as days or months, ACE is well suited to evaluating dressing coverage.

Thus, one can think of the growth of Nursing, towards the line of economic evaluations, especially when it comes to wound care. Within a context, even, of advanced practices, taking into account how much economic analyses contribute to robust results, and providing support for decision-making.¹²

It is known that nurses already play roles beyond patient care, such as being responsible for leadership, education and management of nursing teams in the context of public health in Brazil. With economic assessments in health, it

could not be different, especially in the area of wound care where nursing is dominant, and where a technical professional is needed to assess new technologies.¹⁶

Therefore, economic analyses in health should increasingly be brought to training institutions within the nursing area, both in undergraduate and graduate programs. Also, expanding the discussion to regulatory bodies of the profession.

FINAL CONSIDERATIONS

The article addressed the topic of economic analysis in health, reflecting on the importance of the role of nurses in the selection and implementation of new technologies, especially those aimed at the care of complex wounds. Given the increasing number of innovations emerging on the market in the area of dressings, economic evaluation stands out as an efficient means of selecting materials and equipment for the health area. Given that the evaluation goes beyond measuring costs, it always takes into account the benefits that the technology brings to the population.

Nurses have the scientific training necessary to evaluate the various outcomes related to wound care, and should be the professional who actively participates in the selection of technologies. Therefore, economic analysis is an appropriate method for nurses to have cutting-edge materials and equipment in the unit that serve the population and provide an improvement in quality of life. It demonstrates



that the effective action of a product in wound care can offset the additional costs.

As a limitation of the study, it is pointed out the need for broader studies that can extend this reflection. Furthermore, research can be carried out using other methodologies that can lead to a better understanding and enable the concepts presented here to be implemented.

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