Patient with skin injuries in home care: Advice from the expert wound care nurse. Define and standardize the process at a territorial level

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ABSTRACT

There are many people in charge of the Home Care service in Trentino who have skin lesions, the interventions carried out during 2021 for their management were 51.291. The Service has 3 experienced nurses in wound care management with a master's degree. To date, there is no uniform and official way of managing consultancy on their part; such supervision or advice is handled informally. The aim of this paper is to outline the contents, phases and activities of the consultancy process by the nurse expert in wound care for patients followed by the Home and Palliative Care Service of the Provincial Agency for Health Services of Trento (APSS). Structured interviews were conducted with expert nurses in Wound Care present in the Home and Palliative Care Service and with the Chief Nursing Informatics Officer (CNIO) Technology Department of the APSS. The interviews were conducted face-to-face and audio-recorded with the interviewees' permission. At the end of the transcription, the registrations were cancelled. The data processing was conducted in a way to ensure anonymity. Nurses experienced in wound care highlight these important issues: how counseling is requested and carried out, content of the counseling request, work planning, staff training/supervision, recognition of the role of the expert, guaranteeing time for counseling. The CNIO report how important a multi-professional team work is for the development of digital solutions that allow the traceability of the consultancy process and the collection of data with respect to the computerized process. Fundamental issues emerged for the development of counseling for patients in charge of the Home and Palliative Care Service of APSS such as the need to standardize the methods of requesting and providing counselling, documenting assistance, facilitating the continuity of information, measuring results in terms of process and result indicators. The expert wound care nurse acts at the organizational, professional and patient level.

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INTRODUCTION

In recent decades, the life expectancy of the population has increased considerably, and together with this also the prevalence of diseases that can lead to the development of both acute and chronic skin injuries. Lesions don't resolve by following the stages of healing in a linear way: this criticality entails the need to take charge of the patient for their management. The paradigm shift in healthcare that aims to reduce hospitalization times leads to an increase in the request and management of care in the local area. In fact, the management of injuries is one of the main reasons for requesting home nursing intervention and the same must follow principles and assumptions in order to guarantee correct patient assistance. The role of the wound care expert can play a fundamental role in this sense: 1.5% of the population will have the possibility of having an injury of some kind at any time in their lifetime.[1] Fortunately, many of these are minor or acute and heal without complications, the remaining ones, most of which are chronic ulcers, are a significant cause of patient morbidity, in some cases mortality, and affect quality of life and undermine the social role. Injuries are a cost to the health service representing up to 4% of total expenditure; most of it is made up of nursing time.[1] Preventive, timely, and appropriate management of skin lesions is re-

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quired to reduce adverse outcomes. As anticipated, the prevalence of chronic wounds is increasing due to the aging of the population and the increased incidence of lifestyle-related diseases.[2] In Italy, the prevalent lesions are pressure ulcers (31%), followed by venous ulcers (27%), diabetic foot ulcers (23%), those with arterial or mixed aetiology (16%) and from other types of ulcers (traumatic/surgical, 3%).

Venous ulcers and pressure sores have a prevalence of 1% each in the Italian population: this means that more than one million people need specialist visits, assistance interventions as they have a reduction in the quality of life and last but not least a pain problem. It is therefore of fundamental importance to operate a correct therapeutic strategy that aims to obtain the fastest and most complete recovery possible.[3] A Swedish study demonstrated how by adopting a registry of chronic ulcers which provided for an accurate diagnostic framework, an appropriate treatment for the etiology and the entrustment to a nurse expert in wound care as referent and coordinator of care, has made it possible to reduce the healing time and to reduce the misuse of antibiotics.[4] The treatment of a skin lesion therefore involves two focuses: on the one hand, the healing of the lesion, on the other, where possible, the identification and management of the causes underlying the formation of the lesion. Reaching the diagnosis of skin ulcer is not always so easy, the reasons can essentially be traced back to three situations that can occur simultaneously: organizational reasons and path in the treatment (intervention by several specialists, lack of discussion and coordination, scarce or excessive use/access to diagnostic possibilities, fragmentation of the treatment path/lack of continuity in care); reasons related to patients (difficulties in self-care, poor adherence, economic and social difficulties, poor support from caregivers, etc.); lack of professional knowledge.[4] The intervention of the wound care consultant in this sense can be a strategy that aims at the effective, timely and comprehensive management of patients with skin lesions in order to improve patient outcomes (pain, quality of life, ADL autonomy and IADL, etc.) and on the organization (time to take charge/treatment, costs, etc.).

Another element to consider is the change in nursing care and role in relation to the socio-economic and cultural context, the epidemiological modifications of health problems, the scientific evolution of technology, medicine and healthcare organizations. Born as a generic response of care to the basic needs that a sick person was not able to satisfy independently, nursing assistance has gradually transformed into increasingly specific interventions that have required high skills and competences to respond to increasingly more complex.[5] In recent years, substantial changes in the historical and cultural context have influenced the role and consequently the functions and responsibilities of nursing care. The training course is essential for defining the specific skills that can and must be exercised.[5] In addition to basic training, to acquire the title of professional qualified to practice the profession, nurses can also access some post-basic university training courses to achieve advanced skills by covering roles at different levels. As required by law 43 of 2006, 4 professional and career development opportunities are offered, these include specialist professionals in possession of the first level university master's degree for specialist functions (which also includes the master's degree in wound care).[5] Within this framework, the role of the expert/specialist nurse emerges who opened the doors to the counseling process, which in the past remained the prerogative almost exclusively of medical personnel.

The size of the problem of ulcers and the need for them to be taken care of at all levels supports the need to train and insert the figure of the nurse specialized in wound care or vulnology in the various realities, *i.e.* someone who has acquired specific skills and advances on the management of injuries which can then take charge of the path of the patient with or at risk of injuries. These nurses in daily practice care for patients with difficult wounds, provide consultations, choose appropriate wound treatment, and provide professional support to colleagues. In addition, they are also responsible for updating protocols and making evidence-based decisions regarding dressings and devices. They should also be spokespersons for the paradigm shift, to move from a disease centered approach to a person centered approach, taking into consideration not only the disease but also the carrier subject, thus moving from wound care to wound management".[4] It is therefore evident that the path of diagnosis, treatment and follow-up of a patient with skin lesions is long and complex: there are various actors who will be involved (general practitioner, outpatient or home nurses, hospital specialist doctors such as example the vascular surgeon, the pharmacist, etc.), sometimes the patients find themselves having to face this process alone or the caregivers have difficulty understanding all the necessary steps. This means that the role of case manager can be exercised by the nurse specialized in wound care, who through a multiprofessional and network approach overcomes the fragmentation of knowledge among the various specialists, in order to avoid that the patient is confused and disoriented about his career path.[4] The proposal to develop wound care consultancy in community services emerged from the difficulty encountered by professionals working in this field in having discussions with other colleagues or specialists, but also from the high probability of encountering a patient with wounds or who will develop injuries during care; being an assistance increasingly focused on the long term, this allows the nurse to see evolutions, worsening or stationarity of the various lesions encountered. Multiple

studies have reported that wound care is labour-intensive: up to 66% of community nursing time is spent on wound care with patients receiving an average of 2.4 dressing changes per week.

In the UK it has been reported that up to 4% of total healthcare expenditure goes towards wound care. The establishment of specialist ulcer clinics have improved outcomes in the management of patients with leg ulcers and in particular venous leg ulcers, when nurse-led, more home assessments have been performed than in the hospital setting, leading to a reduction in the frequency of dressing changes, which is significant given the high proportion of nurse visits involving wound care and the travel time required.[1] These data, in association with the will to reform the national health system which aims to develop territorial systems, should support the development of the figure of the nurse specialized in wound management who operates in the territorial area. To date, the figure of the specialist nurse is not defined contractually or at the legislative level; action and commitment by governments, health systems and individual professionals is needed to support the competence and empowerment of nurses to meet the demands of individuals and communities. In this context, the need arises to develop the advice of the expert nurse in wound care in home care in Trentino guaranteed throughout the province by dedicated medical nursing teams belonging to the APSS. There are 11 provincial areas to which nurses and doctors belong who manage all patients with home care needs in the area: 267 nurses of which 92 Pua operators (nursing staff with coordination, planning and monitoring of home activities) and 175 home nurses /outpatient. The data for 2021 shows 75.6% of expert nurses (where nurses in the field for more than 3 years are considered experts) and 22.1% of neophyte nurses (in the field for less than 1 year).

In Primary Care there are 3 nurses who have completed a Masters in Management of Skin injuries and Difficult Wounds (Wound Care), 2 in the Valle dell'Adige and Valle dei Laghi areas and 1 present in the Bassa Valsugana and Tesino areas. All the patients in charge of the Home and Palliative Care service have documented their treatment path in the computerized folder @Home. In 2021, at least one day, 11,301 Care Plans were active throughout the province, nurses made 184,464 home visits, of which 51,291 guaranteed the execution of a simple and/or complex medication (27% of visits). In particular: 1984 accesses with operations for the execution of simple and complex medications at the same time, 29,815 accesses with complex medication operations, 19,492 accesses with simple medication operations Interventions performed in provincial nursing clinics and occasional home services are not calculated. It was therefore decided to carry out a qualitative research by interviewing the expert wound care nurses who work in home care and the nursing staff who deal with the development of digital solutions at the Provincial Agency for Health Services of Trento. The interview was carried out to learn at local level the role played by expert wound care nurses and the counseling method in use. Starting from here, the question was asked of how consultancy should be developed both in terms of content and in terms of organization.

Aims

Outline the contents, phases and activities of the consultancy process by the expert wound care nurse for patients followed by the Company's Home and Palliative Care Service.

MATERIAL AND METHODS

Structured interviews were conducted with expert nurses in Wound Care present in the Home and Palliative Care Service and with the clinical assistance representatives for the development of digital solutions (CNIO – Chief Nursing Information Officer) of the APSS Technology Department. The interviews were conducted face-to-face and audio-recorded with the interviewees' permission. At the end of the transcription, the registrations were cancelled. The data processing was conducted in a way to ensure anonymity.

Authorization to use data

Authorization to access data requested and obtained by the Medical Director and the Director of the Health Professions of the U.O. Primary Care of APSS.

RESULTS

3 face-to-face interviews were carried out: one interview saw the participation of two expert nurses in Wound Care and one interview with the CNIO nurses. An interview with the third nurse expert in Wound Care was conducted remotely as, due to a personal unexpected event, she was unable to be present with the other colleagues. In the following, the expert nurses in wound care will be identified respectively as nurse 1, 2 and 3 and nurse 4 and 5 the CNIO experts. The professional experience of the expert nurses in Wound Care is for all of 5 years in the Home and Palliative Care Service, two obtained the master's degree in Wound Care in 2019, one in 2021. Nurses 4 and 5 have different experiences: one has been working as a CNIO in the Technology Department for 12 years with past experience in the Health Professions Service, the other has been a nursing coordinator in the Home and Palliative Care Service for 4 years and for 5 years collaborates with the Technology Department for the develop-

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ment of digital solutions: in the last 4 months it carries out the work of CNIO exclusively. The interviews had a duration of 26, 25 and 38 minutes respectively.

Nurses experts in wound care

The synthesis of the data collected is presented following the questions that have been performed (Table 1).

Have you ever given advice/supervision as a wound care expert? [Do colleagues see you as an expert in wound care? Do colleagues ask you for advice? How do they ask you for advice?]

All the nurses interviewed report that they provide daily support to their colleagues both in an official and unofficial form (e.g. messages, chat). In this sense, Nurse 1 says that she consults daily "at the cafe, at the machine, in the most disparate places". Nurse 3 reports that she provided advice and supervision not only to fellow nurses, but also to general practitioners in her area.

Compared to your knowledge and experience, when would you like to be activated as a consultant? [What are the characteristics of the requesting healthcare professional that should lead to counseling? Are the criteria for activating the expert's consultancy taught in the training for the new employee?]

All nurses would like to be activated in these situations: complex patient, patient with vascular lesions and patient with polypharmacotherapy. Nurses 1 and 2 would like to be activated in the event that the patient with skin lesions in charge of the service does not show improvements after changing two types of dressing or with specific diagnoses such as diabetes. Nurse 3 would like to consult for hospitalized patients in the hospital adjacent to the Home Care service and post-surgery patients who need home care. The 3 nurses have different opinions regarding the characteristics of the personnel requesting advice. Nurse 1 receives referral requests from all fellow nurses regardless of seniority or level of expertise with respect to skin wound management. Nurses 2 and 3, on the other hand, report how colleagues with less experience (e.g. newcomers) are the ones who should request counseling the most and instead, not recognizing the problem, ask for it less. In this sense, nurse 3 says "colleagues who never ask are the most dangerous".

The interviewees agree in stating that it was important to provide a training course for the newly employed in the management of skin lesions, but that a sharing of the criteria for requesting advice from expert wound care personnel was not envisaged. Nurse 3 expands the vision of a consultant as she sees the need for the wound care expert to be the professional who supports a continuous training process (updates, annual refresh…) and who is the supervisor for newbies in days dedicated to management of skin lesions.

Compared to the method of requesting advice, how do you expect it to be acted out?

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Table 1. Table of interview guiding questions.

Question	Objective	Secondary questions
Have you ever given advice/supervision as a wound care expert?	Introduce to the topic and outline the AS IS	• Do colleagues see you as an expert in wound care? • Do colleagues ask you for advice? • How do they ask you for advice?
Compared to your knowledge and experience, when would you like to be activated as a consultant?	Define the TO BEdefine the activation criteria	• What are the patient characteristics that should lead to counseling? • What are the characteristics of the requesting healthcare professional that should lead to counseling? • Are the criteria for activating expert advice taught in the training for the new employee?
Compared to the method of requesting advice, how do you expect it to be acted out?	Define the TO BEdefine content and methods	• What are the fundamental contents in the request for advice?
With respect to the way of managing/executing the consultancy, how do you expect to do it?	Define the TO BEdefine content and methods	• How do you document it? • Single or collective action • Remote/presence • Referent/consultant • Monitoring
How do you imagine the follow up?	Define the TO BE Define indicators on the specific and 'system' case	• Case and system indicators (healing times, no. of consultations done, no. of injuries treated…)

Nurses 1 and 2 would like the consultation request to be documented (avoid calls, they would prefer an e-mail). All the professionals agree that at the time of the request, the professional is able to provide them with complete information relating to the case: pathologies, photos of the lesion, Braden scale if a pressure lesion, treatment, specialist visits, tests in progress, antibiotic therapy, lesion pad, goal of management (healing, maintenance…). Nurse 3 adds that she would like to know the factors that delay or predispose healing (e.g. nutrition).

Compared to the way of managing/executing the consultancy, how do you expect it to be done? [How do you document it? Do you do it remotely/presence? When do you want to be a contact person or a consultant? How do you monitor?]

Nurses 1 and 2 declare that the consultant decides how to carry out the consultancy based on the characteristics of the user and the workload.

Nurses 2 and 3 also add that they would like to trace their actions as consultancy, they would no longer like to report their intervention as an expert as a "normal" access as they trace management recommendations, which are then acted upon by the other nurses in the team. Nurse 3 declares that he would like to provide consultancy not only within his own territory (other territories and/or other structures) and in this sense he also foresees remote consultancy as a suitable method, which has the advantage of reducing time. However, he declares "in more complex cases it would be nice to go and see them".

Nurse 3 would like the consultancy path of the nurse expert in Wound Care to have the same characteristics as the medical consultancy (report) in order to guarantee continuity of care in the event that the patient changes setting (e.g. hospitalization), also providing for the possibility of attaching documentation. All nurses would like to be referents, not just consultants, for patients who need elastic compression bandaging as they are not very widespread skills and therefore expert intervention would improve the outcome for the patient. In particular, nurse 3 raises the question of the dissemination of basic and specialist skills and their maintenance. All the experts agree that monitoring should be personalized according to the patient's condition, and in any case they foresee a re-evaluation within a maximum time of 3-4 weeks. All nurses exclude the need for a re-evaluation by the expert in the event that a lesion improves and/or heals after the consultation: referring to an active role of the referring professional. In this sense, they also expect to be informed about the healing of an injury.

How do you imagine the follow up?

Nurse 2 does not specifically identify any indicators, but sees the need for the case to be analyzed upon recovery or at the end of taking charge in order to understand how to improve subsequent management. Nurse 2 concludes with the problem of networking professionals so that any consultant who intervenes on the patient has the opportunity to know who is managing him in order to give opinions that take into consideration the path taken. Added to this is the possibility of being able to discuss between professionals (e.g. hospital specialist with general practitioner, hospital specialist with inf. Wound care expert…) in order to avoid that the patient has conflicting advice and opinions or "vague between consultants". Nurses 1 and 3 also see in this aspect the possibility of making the role of the expert nurse in wound care known and increasing doctor-nurse collaboration in respect of their role, but enhancing expert competence. All nurses see the need to be able to work as a team to distribute requests for advice and to be able to compare notes.

Chief nursing informatics officer

Is there the possibility of tracing a consultation in the computerized medical record? How do you develop an IT system to support a care process?

Nurses 4 and 5 are unanimous in defining that the computerized record @Home was created with the aim of tracing the assistance that is provided to patients at home. It is a folder introduced in 2017 which has seen its functions increase over time in an incremental development logic implemented with the Agile approach.

The development of this IT solution has always seen the collaboration of a multi-professional team that guarantees the response to the needs of users, organization and functionality from a technical point of view (CNIO, Corporate Governance, IT technicians, Project Managers). First of all, the development that documented the taking charge by the team of home and palliative care implemented by the nursing and medical staff was envisaged. For some months, other professionals who intervene at home, even as consultants, have asked to be able to access the system to track their intervention. The systems are developed to support the care processes, therefore the process to be computerized must first be precisely defined at an organizational level (beginning, phases, actors involved, activities, etc.): this first, fundamental analysis is performed in collaboration between the technical services and the professionals involved. When the process has been defined, the Technology Department formulates IT solution hypotheses that it submits to the users and improves through feedback. In the meantime, in addition to system maintenance, new functions are developed with respect to problems that arise in everyday life. Upon release, users test it and validate the solution or propose new improvements, developments. The

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consultations, which will soon be answered in the system, are those performed by physiotherapists, psychologists, nurses expert in wound care and PEG management, occupational therapists, neurologists and child neuropsychiatrists. These are the professionals who have expressed interest, but the system is being studied so as to be able to accommodate further future needs, also in anticipation of the organizational changes that the DM 77 of 2022 and the PNRR bring with them.

The consultancy process has been outlined within the system which will provide for the documentation of four phases: identification of the need, sending of the request for consultancy, management of the request and planning of activities and execution of the consultancy and reporting. For each phase, the actors involved, the method of execution of the actions/activities, the contents to be documented and the necessary data that can be summarized, extrapolated and then analyzed to ensure monitoring of the performance of the consultancy carried out (e.g. number of consultancy per type of expert, by type of care taken, by area, etc.), but also of result indicators (e.g. patients recovered, number of consultations performed per individual case, duration of care taken for specific problems). Theirs is a continuous work of 'tailoring' that allows you to have a system that responds to the needs of the organization, which describes the process implemented in a linear and exhaustive way and at the same time is easy to use.

CONCLUSIONS

The purpose of the research was to standardize the intervention and role of the expert wound care nurse for patients in charge of the Home and Palliative Care Service of Trentino and evaluate how to introduce counseling to lead to an improvement in outcomes and the management of patients with skin lesions. It has been highlighted that the request and execution of the consultation by the expert wound care personnel in home care is already in place in an informal way. The consultancy process consists of 4 phases: identification of the need, sending of the request for consultancy, management of the request and planning/reporting of activities (Figure 1).

First of all, a formalization and knowledge by all the professionals of the team of the role and presence of expert nurses in wound care would broaden the request for intervention and improve the appropriateness in detecting the need.

In this sense, staff training is a central element of development so that the consultancy can be acted in an appropriate and effective way to standardize the basic knowledge for the management of skin lesions and can provide complete and precise requests. As a result, the expert wound care nurse takes on the role of direct patient consultant and collaborates with the organization for the training and development of care pathways, also with the adoption of digital solutions (Figure 2). The nurses gave important ideas for tracing the sending of the request, bringing cognitive elements of the territorial peculiarity and ideas for further development (elimination of paper documentation). Effective planning involves two aspects, on the one hand, the execution of joint visits as a training moment for the colleague, allowing staff to improve their knowledge and experiment in safety, especially in the case of neophyte staff; on the other hand they would like to have the opportunity to be a single group of experts in order to distribute requests, but also to work in teams to increase the space for discussion and developed expertise.

A critical element for carrying out the visits at the moment is the availability of time that the experts can reserve for the consultancy activity, in this sense, as emerged from

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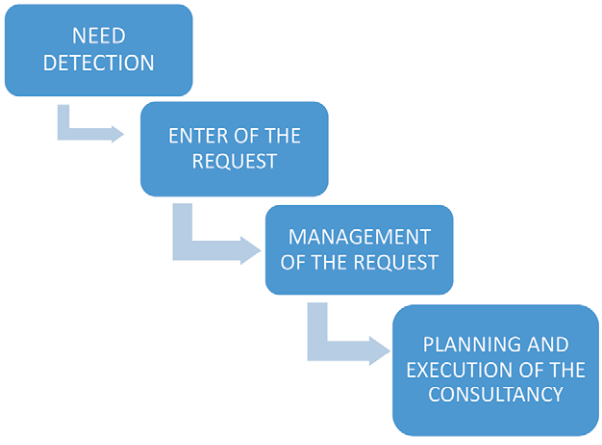

Figure 1. Stages in the counselling process.

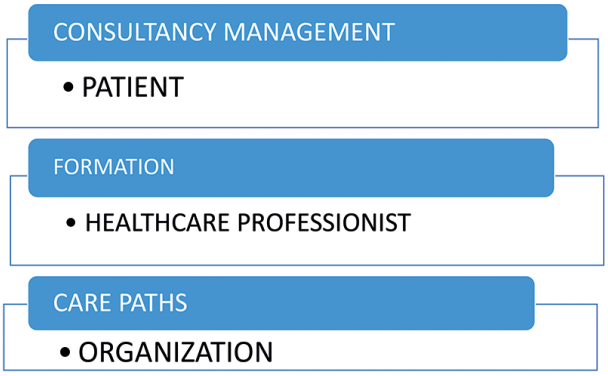

Figure 2. Areas of action and addressees of counselling.

the CNIO team, it is making sure that the IT systems not only allow a continuity of information useful for multi-professional work, but gives the possibility of extrapolating activity data that allows Management to understand the necessary investment, for example in terms of human resources. In this sense, a multi-professional team (Management, expert nurses, CNIO, IT technicians) is a working methodology that allows you to effectively digitize care pathways. The new forms of assistance provided by Telemedicine could facilitate the execution of expert advice in such a large territory. The design of the consultancy path for the wound care expert, and not only that, will be developed in a short time also using the contribution obtained from this paper which has highlighted contents and ideas aimed at the needs of patients. It is a first step for the documentation of the consultancy and can provide useful data for conducting organizational research and demonstrating what results are obtained with the introduction of the figure of the expert wound care consultant.

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