

WOUND CURRICULUM FOR NURSES

POST-REGISTRATION
QUALIFICATION WOUND
MANAGEMENT

EUROPEAN
QUALIFICATION
FRAMEWORK
LEVEL 5



Andrea Pokorná,¹ RN, PhD, Associate Professor, Senior lecturer

Samantha Holloway,² RN, MSc, Senior Lecturer

Robert Strohal,³ MD

Ida Verheyen-Cronau,⁴ RN, Manager

1. Medical Faculty, Masaryk University, Dept. of Nursing, Brno, Czech Republic, Institute of Health Information and Statistics of the Czech Republic, Department of quality of care assessment (Head of Department)
2. Centre for Medical Education, School of Medicine, Cardiff University, Wales, UK
3. Head of Department, Dept. of Dermatology and Venerology, Federal University Teaching, Hospital Feldkirch, Austria (Head of Department)
4. Anerkennungs- und Zertifizierstelle ICW e.V. /PersCert TÜV, Initiative Chronische Wunde (ICW), Germany

Editorial support and coordination: **Julie Bjerregaard**, EWMA Secretariat

Corresponding author: **Andrea Pokorna**, apokorna@med.muni.cz

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Tel: +44 (0)20 7738 5454 Email: anthony.kerr@markallengroup.com Web: www.markallengroup.com

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I. Introduction

The European Wound Management Association (EWMA) has just finalised the first curriculum in a series of several curricula intended for use in levels 5–7 of the European Qualifications Framework (EQF). The aim of these is to support a common approach to post-registration qualification in wound management for nurses across Europe. EWMA hopes and will work towards a close collaboration with European nurse organisations as well as educational institutions to implement these common curricula

In recent years, the care of people with chronic wounds has made enormous progress throughout Europe. To bring existing evidence-based and best practice knowledge to all professional nurses ('professional nurses' refers to registered nurses in a specific country who are allowed to work independently) is a key objective of the EWMA. For this reason, EWMA has developed a curriculum for nurses which aligns with the EWMA curriculum on wound healing for physicians which was approved by the European Union of Medical Specialists (UEMS) in April 2015.¹ The curriculum was developed by a working group representing different European countries and providers of education.

Since the vocational qualifications in Europe are not all at the same level and the pre-registration curricula may differ, three curricula referring to different EQF levels are under development. This curriculum is in-tended for the European Qualification Framework (EQF)² level 5. Curricula intended for EQF level 6 and

7 will be available in due course. The curriculum was developed by a working group representing different European countries and providers of education.

Depending on the educational level of the undergraduate qualification of the participants (nursing students) the EWMA curricula can be adapted to meet the competencies expected at level 5, 6 or 7.



I.1 Scope, aims and objectives of the curriculum

This curriculum takes into account that individuals with chronic wounds³ have very specific therapy and care needs related to their clinical presentation as well as challenges related to multiple comorbidities (in the following, the term

'chronic wounds' explicitly includes non-healing wounds or hard-to-heal wounds). Moreover, it includes wounds that do not fall in the category of chronic wounds because of duration, but are considered to be chronic wounds, and therefore have a higher probability of following a chronic course (i.e. pressure ulcers). To be able to apply a holistic approach to and provide effective management of individuals with wounds, the nurse must therefore have specific knowledge, practical skills and awareness about patient safety, local wound care, the overall patient status and interdisciplinary teamwork. The nursing process provides the overarching framework for the curriculum and takes into account the outcomes of the interventions in the course of care (prevention, diagnostics and treatment).

The curriculum explores a range of comprehensive nursing interventions such as the assessment, planning, interventions and evaluation related to individuals with acute and chronic wounds. It should allow the students to extend their knowledge of wound care to obtain specific competencies. This constitutes explicit *knowledge* of the relationships between the underlying diseases with the onset of chronic wounds, as well as their guideline-based care in terms of causal, local and concomitant therapy.

Finally, the curriculum also aims to support the development of the nurse's ability to assess the psychosocial and behavioural aspects of patients with wounds and to promote the patient's quality of life. The curriculum aims to provide the students with *theoretical and practical skills* to support appropriate decision making (evidence-based nursing and practice, problem-based learning and practical-based learning).

A professional Scope of Practice and Code of Conduct are considered fundamental and essential components to guide nursing practice. Clear guidance should be provided and defined with regards to professional boundaries (the formal authorisation of a specific group of professionals to perform specific tasks, defined by national legislation), for example in relation to interventions such as wound debridement. These boundaries are, however, typically defined according to national or local recommendations or legislation and have therefore not been provided within the curriculum.

1.2 Format

The curriculum summarises the required learning goals related to the inter-professional and interdisciplinary approach to managing individuals with wounds. The curriculum could be included or adapted in other relevant post-registration and postgraduate training programmes.

Learning goals (outcomes) are presented under all the units in the following categories with reference to Bloom's taxonomy:³

- Knowledge/cognitive (K)
- Pragmatic, psychomotor skills (P)
- Awareness/behaviour (A)

As this curriculum is proposed for incorporation into existing programmes in different European countries,⁴ specific details of the teaching and learning methods as well as assessment and evaluation methods are not included. These should follow the structure used by the education

provider while incorporating the content and learning objectives provided in this curriculum according to local legislation and procedures (law and accreditation processes).

1.3 Target group

The minimum requirement, for the target group, is an officially recognised professional role as a general/registered Nurse according to EU legislation⁴ with or without a Bachelor of Nursing qualification in the relevant country. It is recommended that the nurse should ideally have a minimum of six months vocational training after completion of their basic training.

1.4 Curriculum framework

The curriculum is designed in a modular structure. It includes:

- Sixteen units of study with a minimum total of 100 learning units (of 45 minutes duration).
- Self-directed learning based on structured tasks within a health care related environment equal to 50 hours of workload.
- Supervised practice in the workplace. This must take place in different healthcare institutions with clinical experience in the management of individuals with chronic/non healing wounds. Supervised practice should be undertaken by a recognised professional in wound management (according to local or national health-care

Workload (minimum number of hours):

Face-to-face teaching	100 h
Supervised practice	50 h
Work-based learning (self-directed learning)	50 h
Exam (including preparation)	50 h
In total:	250 h

institution policies). It should include a workload of 50 hours (40 hours for practical skills training and 10 hours for a written report).

The described learning outcome corresponds to the EQF (European Qualification Framework) level 5.⁵

To convert the workload in European Credit Points (ECTS) conversion tables are available. The accepted conversion is that 1 credit corresponds to approximately 25–30 hours of the students' workload.

References

- 1 EWMA. EWMA Education Activities <http://ewma.org/what-we-do/education/wound-curriculum-physicians/> (accessed 10 November 2017)
- 2 European Commission. Learning Opportunities and Qualifications in Europe. <https://tinyurl.com/hkca4mg> (accessed 10 November 2017)
- 3 Bloom BS, Engelhart MD, Furst EJ et al. Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain. David McKay Company, 1956.
- 4 Keighley T. European Union Standards for Nursing and Midwifery: Information for Accession Countries. (2nd edn) 2009, <https://tinyurl.com/ya4ufmd9> (accessed 10 November 2017)
- 5 The European Qualifications Framework (EQF) is a translation tool that helps communication and comparison between qualifications systems in Europe: <https://tinyurl.com/ycry92mu> (accessed 10 November 2017)

2. Learning goals and outcomes

K: Knowledge/theoretical skills will be tested in an examination

P: Pragmatic skills/application of knowledge will be tested in a practical manner as clinical skills

A: Awareness/behaviour will be assessed as an integrated part of the skills related to the practice

It is expected that self-directed learning is undertaken as an integrated part of the learning process.

The educational level/learning outcomes are aligned to (or have been designed to meet) the European Education Framework (EQF) according to competence Level 5.¹ On successful completion of the curriculum the individual will have achieved 10 ECTS in wound management and may be able to seek accreditation according to any additional local legislation in the respective country).

Reference

1 The European Qualifications Framework (EQF) is a translation tool that helps communication and comparison between qualifications systems in Europe: <https://tinyurl.com/ycry92mu> (accessed 10 November 2017)

3. Topics/learning goals (units of study)

Unit 1: role of prevention in wound care

Aim

This unit of study aims to increase the knowledge and understanding of the importance of prevention in relation to the risk factors for developing a chronic wound. These include the different levels of prevention and, in particular, the risk of spreading infection.

Learning outcomes

On completion of the unit of study a student will be able to:

K: define the different definitions of primary, secondary and tertiary prevention

K: describe the goals of the prevention of wounds in the special chronic disease (diabetes, vascular diseases, and others with higher risk of wound formation)

P: initiate preventive measures according to the type of chronic disease and the individual patient's situation

P: implement preventive strategies (e.g. basic hand hygiene and pressure relief)

P: prepare an individualised care plan for specific patients

A: be aware of the importance of prevention

A: appreciate the significance of the nurse's role in wound prevention

Content of the unit of study

- Stages of prevention and its measures (primary, secondary and tertiary prevention)
- Role of the nurse in the prevention of chronic wounds

- Requirements of prophylaxis in preventing the recurrence of secondary complications (Prevention and prophylaxis are also dealt with in a number of other units: 2,6,7,12,13 and 14):
 - Skin care
 - Pressure redistribution
 - Compression therapy.

Unit 2: evidence-based nursing/ evidence-based practice

Aim

This unit of study aims to extend the knowledge of EBN and implement the findings into practical cases.

Learning outcomes

On completion of the unit of study a student should be able to:

K: define the key points of and goal setting in EBN

K: examine the range of evidence currently available that describes wound management interventions and evaluate the strength of these as sources of information

K/P: examine scientific literature about wound care according to its date of publication, relevance and evidence levels.

K/P: describe the available assessment instruments, tools and/or scales and their potential use and areas of application

K: describe the theoretical grounds that apply to wound prevention

K: describe the current status of and defined challenges related to EBN in wound management

K: discuss and apply evidence-based wound prevention strategies and measures

P: make decisions based on internal and external evidence and in consideration about patients' preferences and the local clinical and legal situation (Internal evidence includes health-care institution based quality improvement projects, outcome management initiatives, and clinical expertise. External evidence includes systematic reviews, randomised control trials, best practice, and clinical practice guidelines that support a change in clinical practice)

P: perform tasks in wound care based on an analysis of the situation related to specific patient cases using evidence-based solutions.

P: assign practical measures to EBN scientific findings

P: initiate preventive measures with different orientations according to the chronic disease and the individual situation

P: use existing wound-related assessment instruments, tools and/or scales designed for specific target groups and interpret the results

P: select and use wound care related instruments for different patient groups, compare different values and resolve conflicts with EBN findings and practical daily routine in nursing care—be able to ask questions and use critical thinking

A: recognise the need to keep up to date with new scientific knowledge and question existing knowledge

A: be aware of the advantages and disadvantages of assessment instruments in EBN

Content of the unit of study

- The principles of EBN
- Steps required to practice EBN

- The influence of EBN on the care of individuals with chronic wounds
- Classification of evidence according to a recognised hierarchy of evidence
- Critical analysis of research studies
- Clinical trials in wound care
- Reviewing published literature
- National and international institutions relating to EBN and chronic wounds (i.e. guidelines, recommendations) for example NPUAP/EPUAP/ Pan Pacific Pressure Injury Alliance (PPPIA)/ EWMA position documents
- Introduction to the different types of assessment instruments, tools and/or scales as well as the recommended use and limitations of these instruments.

Unit 3: patient education and promoting self-care

Aim

This unit aims to create an understanding of the importance of education in managing individuals with acute and chronic wounds. It also aims to improve the participants ability to provide the patient and his/her relatives with information about their specific health status and self-care needs/opportunities based on the principles of patient-centred care.

Learning outcomes

On completion of the unit of study a student should be able to:

K: describe the principles of self-care management in relation to individuals with chronic wounds/ disease

K: describe the procedures for educating individuals with acute and chronic wounds based on an evaluation of different educational concepts

K: define the requirements for developing an individualised education plan that is appropriate for a specific patient, taking the patient's disease and situation into consideration

K: discuss the use of different assessment tools in order to obtain information about the patient's knowledge of their condition and identify the patient's learning style

K/P: formulate relevant clinical questions based on an evaluation of the available research and the sources of research

K: define nursing diagnosis and compare with medical diagnosis (e.g. with reference to diagnosis procedures recommended by NANDA)² (NANDA works to facilitate the development, refinement, dissemination and use of standardised nursing diagnostic terminology. The systematic diagnostic procedures defined by NANDA are widely used in Central Europe, while other countries use alternative systems. The terminology should be adapted to the diagnostic terminology applied within a specific country. www.nanda.org)

A/K: appreciate/explain the impact of psychosocial or behavioural factors that may influence the patient's response to their illness

K: perform a systematic evaluation the patient's ability to perform self-care on the basis of the goals defined in the patient education plan

P: apply the standardised terminology (e.g. NANDA)² in relation to specific nursing diagnostics, relevant for patients with wounds

P: create a patient centred education plan based on an assessment of the patient's educational ability

P: comprehend the patient's understanding of his/her illness via an empathic and professional conversation

K: understand the appropriateness and use of self-care for individuals with a wound

K: undertake responsibility for the education of a patient with a chronic wound as well as their relatives/carers where appropriate to enable the patient to conduct self-care

A: appreciate the influence of a patient's fears and misconceptions of their body on their behaviour

A: recognise the promotion of patient self-management as an integrated part of patient education

A: accept the need to include patients and their relatives/carers in the decision making process

The unit of study content

- Role of the nurse in the patient education process in relation to individuals with wounds
- Educational needs of individuals with acute and chronic wounds
- Goals of education in wound care and the elements of the educational process
- Recognising an individual's (and/or their 'relatives/carers') ability to receive education
- Different elements of education and their differences concerning goals and application: information, training, instruction
- Educational tools (selection and use of brochures and various types of media)
- Evaluation of the educational process
- Goals of education to promote self-management
- The role of motivation and bonding in patient's education

- The individual's understanding of their wound and/or disease
- The importance of the role of relatives and/or carers in the education process
- Promotion of self-care management (restrictions in activities of daily living as a result of health restrictions by chronic wounds and consequences of self-care):
 - Self-care concept in the management of individuals with chronic wounds based on the principles proposed by Orem's Model¹
 - Empowerment (based on a recognised health belief model)
- Assessment of self-care and QoL/health-related QoL (HRQoL) for individuals with chronic wounds
- Chronic diseases and body acceptance/self-conception
 - Common features of patients with chronic diseases³
 - Typical psycho-social consequences of chronic diseases and their complications)
- NANDA taxonomy (see literature NANDA nursing diagnostic)²
 - Difference between nursing diagnosis and medical/physician diagnosis
 - Systematic and diagnostic process using NANDA²
- Key terms
 - Groups/kinds of NANDA,² diagnoses (risk-problem-focused diagnoses, axis)
 - Relevant NANDA nursing diagnosis, concerning people with chronic wounds as examples
 - Planning interventions based on the assessment of the following diagnoses (with

reference to the NANDA,^{2,4} classes or similar standardised terminology systems)

- Class Circulation: (risk of) ineffective peripheral tissue perfusion
- Class skin/tissue : (risk of) pressure ulcer, impaired tissue integrity
- Risk for vascular trauma
- Risk of peripheral neurovascular dysfunction
- Class self-concept: disturbed body image
- Class comfort: acute/chronic pain
- Class coping: ineffective activity planning
- Class physical ability : impaired mobility
- Class energy balance: activity intolerance
- Class social function: risk of loneliness
- Class self-care: deficit of self-care in relationship of measures in the context with the wound therapy
- Class health promotion: ineffective health management, protection, deficit of knowledge
- Class health hazard: risk of infection, bleeding, late surgical recovery.

Several of these diagnoses may be combined with different clinical pictures. They may be used as a basis for developing plans for patient self-care and education. It should be noted that the systematic diagnostic procedures defined by NANDA are widely used in Central Europe, while other countries use alternatives systems. The terminology should be adapted to the diagnostic terminology applied within a specific country.

Unit 4: case management (patient-centred care)

Aim

This unit of study aims to increase the knowledge and understanding of case management in order to manage patient cases over the course of therapy and care in different settings.

Learning outcomes

On completion of the unit of study a student should be able to:

K: justify the need for case management regarding the current situation of the patients and other stakeholders

K: describe the options for case management taking into account the relevant legal basis of the particular health-care system

K: recognise the relevance of case management in relation to the holistic nursing process

K: identify potential patient safety risks in the care of patients with chronic wounds as well as strategies for overcoming these risks

K: identify appropriate strategies to prevent gaps/inequalities in care and promote the process of evidence-based care and interventions

K: recognise the importance of discharge planning as part of the case management of an individual with a chronic wound

K: analyse the problems that may occur due to inadequate management of the patient

P: manage the care process and the people involved in this to prevent patient safety risks

P: involve different stakeholders, including relatives/carers, in the support process and define their specific tasks in the provision of care.

A: be aware of the problems that arise from inadequate case management

A: recognise his/her professional role in case management of individuals/patients with chronic wounds

A: be aware of the complexity of the patient's situation (medical status, social status, network, etc.) in the context of case management

The unit of study content

- Definition and philosophy of case management on individual level
- Specific needs of individuals with chronic wounds
- Problems that may arise from breaks in the

continuity of medical/nursing care on the part of the patient, other private caregivers and the health-care system

- Role of private caregivers in the case management of patients with chronic wounds
- Relatives and their role in support of the patient
- The role of individual professions in the multidisciplinary team

Unit 5: wounds and wound healing

Aim

This unit of study aims to increase the knowledge and understanding of physiological and pathological wound healing.

Learning outcomes

On completion of the unit of study a student will be able to:

K: describe the phases of wound healing

K: define different types of healing

K: explain the connection between wound healing and systemic (intrinsic), extrinsic or local factors

K: define chronic wounds based on their characteristics and causes

K: describe disorders of wound healing

K: analyse factors that promote and delay wound-healing in relation to patient cases

P: relate the stages of normal healing to the clinical presentation of a wound

P: recognise the characteristics of different wounds in relation to different chronic diseases; such as diabetes (diabetic foot ulcers, DFU) and vascular diseases (leg ulcers, LU)

P: categorise the wound based on standardised criteria

A: value the wound healing pathophysiology as a starting point for treatment, recognition of type of

wound bed etc

A: be aware of the consequences of chronic wounds and the impact they have on a patient's daily life.

Unit of study content:

- Physiology of normal wound healing
- Blood coagulation (effect of anticoagulation substances on wound healing)
- Phases of wound healing, i.e., inflammation, proliferation, and remodelling
- Primary wound healing
- Secondary wound healing (a repair process), delayed primary closure
- Pathophysiology and microbiology of chronic wound healing
- Factors affecting healing (such as infection and reduced perfusion)
- Wound diagnosis
- *Practical examples.*

Unit 6: nutrition and wound healing

Aim

This unit of study aims to increase the nurse's knowledge and understanding of the influence of nutrition on wound healing.

Learning outcomes

On completion of the unit of study a student will be able to:

K: describe the importance of adequate nutrition for a patient with a wound

K: discuss the function of nutrients in the normal wound healing process

K: outline common conditions that affect an individual's nutritional requirements

K: outline the use of nutritional screening tools in the assessment

K: explain the influence of malnutrition on wound healing

K: discuss the role of the dietician in the management of patients with wounds

K: explain the hospital-related factors, which cause an altered food intake

K: discuss risk of malnutrition in an in-patient and out-patient context

P: apply nursing-related measures to support the individual's food intake

P: conduct a nutritional assessment and prepare a nutrition plan for the patient

P: select the appropriate food supplements following a comprehensive assessment and related to different outcome

K: relate the significance of effects of malnutrition on wound healing

A: acknowledge the importance of assessment of nutrition as an important element of wound therapy

A: accept and respect the individual's cultural beliefs, views and attitudes concerning their nutrition.

Unit of study content

- Calorific or other nutritional needs of patients with an acute or chronic wound
- Specific requirements of individuals with special chronic diseases (i.e. diabetes)
- Optimal nutritional composition to promote wound healing
- Function of nutrients, including vitamins, proteins, and minerals
- Nutritional assessment and nutritional screening tools

- Effects of malnutrition on wound healing
- Assessment of nutritional status including signs and symptoms of dehydration and anthropometric measurements, also biochemical data and interpreting laboratory values
- Role of nutrition in the prevention of wounds
- Role of the dietician
- Influences on food intake such as hospitalisation, wound odour, etc
- Sociocultural influences on nutrition
- Parenteral and enteral forms of nutritional supplementation
- *Practical examples.*

Unit 7: microbiology and wounds

Aim

This unit of study aims to increase the understanding of the nature of infections in wounds with special focus on prevention and symptomatology of complications of infection.

Learning outcomes

On completion of the unit of study a student will be able to:

- K:** understand the nature of infections in wounds
- K:** define the severity of the wound infection
- K:** identify the requirements for different treatment depending on the degree of wound infection
- K:** analyse the case-related risks of wound infection
- K:** describe the potential consequences of wound infection for the patient
- K:** explain the risks associated with spreading

infection and a possible sepsis

P: identify wounds with high risk of infection and typical causes of infection

P: initiate hygienic and therapeutic measures for multidrug resistant germs including patient and family education

P: undertake/carry out the correct procedure to take a wound swab

P: educate the patients and their relatives/carers to recognise warning symptoms of infection and appropriate measures to take

A: appreciate the significance of resistant germs in wound healing

A: develop a responsible attitude towards risk identification and early detection of nosocomial infections

A: be aware of the need for support in case of multiresistant pathogens infections (need for special regimen, lifestyle changes etc).

Unit of study content

- Contamination, colonisation, and local and systemic infection symptomatology
- Risk factors for wound infection
- Problematic and non-problematic germs
- The nature of multidrug resistant bacteria
- Procedures for meticillin-resistant *Staphylococcus aureus* (MRSA) and other multidrug resistant bacteria
- Prophylaxis and epidemiology with regard to MRSA and other multidrug resistant bacteria
- Assessment and diagnosis of infection
- Biofilms
- Role of microbiological culture techniques
- *Practical examples.*

Unit 8: antimicrobial agents, hygiene and wounds

Aim

This unit of study aims to increase the nursing understanding of the nature of antimicrobial therapy and prophylaxis with special focus on safety guidelines.

Learning outcomes

On completion of the unit of study a student will be able to:

- K:** understand the nature of antimicrobial therapy and prophylaxis
- K:** understand the different indications for local antiseptic in relationship to systemic antibiotic therapy
- P:** work appropriately (according to local, national or international evidence based guidelines) with special antimicrobial wound therapeutics
- P:** perform all hygienic measures related to wound care
- P:** follow the hygiene guidelines with regards to dressing changes and hand hygiene
- A:** Appreciate the responsibilities for different aspects of hygiene.

Unit of study content

- Disinfection and sterilisation
- Antiseptics
- Systemic antibiotics
- Antimicrobial wound dressings
- Hygiene and dressing changes
- *Practical examples.*

Unit 9: debridement and wounds

Aim

This unit of study aims to increase the understanding of the role of debridement as an integrated part of wound management and the role of nurses in different types of debridement.

Learning outcomes

On completion of the unit of study a student will be able to:

- K:** explain the reasons for use of debridement and risk factors in practice
- K:** describe, classify, and define various debridement techniques
- P:** perform a comprehensive wound assessment to evaluate whether wound debridement is required
- P:** evaluate different debridement methods and their effectiveness
- P:** use different methods of debridement based on the range of therapy options, patient situation and scope of practice
- P:** carry out debridement in a painless way, if necessary by administering analgesia or local anaesthetics
- P:** perform appropriate aftercare following an debridement procedure
- A:** appreciate the importance of professional accountability and limitations of clinical practice
- A:** recognise the patient's concerns and presence of pain.

Unit of study content

- Introduction to debridement: definition and indications
- Mechanical debridement
- Autolytic, enzymatic debridement (including honey)
- Larval therapy (maggot therapy)

- Technical solutions
- Sharp and surgical debridement
- Pain management (local/systemic analgesia) as part of the debridement procedure
- *Practical examples.*

Unit 10: moist wound healing

Aim

This unit of study aims to increase the understanding of the appropriate use of different wound dressings in relation to the phase of wound healing.

Learning outcomes

On completion of the unit of study a student will be able to:

K: understand the principles of phase-appropriate wound treatment with respect to local therapy

K: describe and define the correct use of different wound dressings

K: explain the criteria for the ideal use of wound care products and categorise these into different groups of products (dressings, solutions etc.)

K: define the product characteristics and indications for wound therapy

P: apply the products correctly in an appropriate situation

P: evaluate and select products taking into account the patient's QoL

P: select the appropriate dressing from the available therapeutic products in practice, based on indications/contraindications, health economic aspects, and the preferences of the individual patient

P: involve the patient (and/or carer/relative in their wound care depending on his/her abilities and wishes

P: evaluate local wound therapy with the patient depending on the treatment goals

A: recognise their responsibility concerning economic aspects of wound healing (cost effectiveness measures)

A: be aware of the coherence between local wound therapy and general treatment of overall condition and patient's QoL.

Unit of study content

- Principles of moist wound therapy in relation to the phase of wound healing
- 'Ideal' wound dressings (requirements for appropriate therapeutic materials)
- Review the role of gauze in wound management
- Water and wound cleansing solutions, e.g. wound irrigation solutions and antiseptics
- Dressing categories with different material properties: indications, contraindications, and application
 - Contact layer/wound gauze
 - Transparent polyurethane
 - Alginates
 - Foams (fine-pored polyurethane foam dressings)
 - Hydrogels (see debridement)
 - Hydroactive dressings
 - Hydrofibres
 - Hydrocolloids
 - Hydropolymers
 - Superabsorbent dressing
- Specialised active agents
 - Topical antiseptics (antiphlogistics)
 - Topical antibiotics
 - Agents supporting initiation of granulation tissue
- Specific wound situations (see examples below)
 - Pain in relation to dressing change
 - Control of wound odour (activated carbon)
 - Exudate management

- Combating biofilm and infection
- Bleeding
- Contact dermatitis
- *Practical examples.*

Unit 11: alternative or unconventional treatment options for wounds

Aim

This unit of study aims to increase the understanding of the potential and limitations of new or alternative treatment methods (in relation to the competencies). These treatments include emerging therapies and treatment options under development.

Learning outcomes

On completion of the unit of study a student will be able to:

- K:** discuss the potential and limitations of new alternative treatments for wound management
- K:** describe the different treatment methods and agents used in dressings defined as new/alternative treatment options compared to standard treatment
- P:** apply indications for use of alternative treatment options
- P:** use alternative treatment options in practice where appropriate
- A:** recognise the limitations and benefits of alternative treatment options, also taking into consideration the legal and ethical aspects.

Unit of study content:

- Negative pressure wound therapy (NPWT)
- Laser therapy
- Hyperbaric oxygen therapy (HBOT)
- Topical oxygen therapy

- Ultrasound therapy
- Genetically modified wound healing factors
- Electrical stimulation
- Plasma therapy
- *Practical examples.*

Unit 12: pressure ulcers

Aim

This unit of study aims to increase the understanding of the diagnosis, prevention and treatment of pressure ulcers (also called pressure injuries or decubitus ulcers).

Study goals

On completion of the unit of study a student will be able to:

- K:** understand the pathophysiological mechanisms of pressure ulcer development
- K/P:** categorise pressure ulcers according to the levels defined by the European Pressure Ulcer Advisory Panel (EPUAP/NPUAP/PPPIA) in theory and clinical practice
- K:** select the available therapeutic options for pressure ulcer treatment, depending on the patient situation
- K/P:** examine factors that predispose an individual to pressure damage
- K:** define risk factors related to specific types of patients
- K:** analyse the possible case-related causes of a pressure ulcer (decubitus)
- P:** discriminate between different types of skin damage in order to differentiate damage due to pressure or other causes for example moisture lesion, moisture associated skin damage, mechanical device related damage
- P:** use appropriate pressure redistributing equipment and evaluate their effectiveness

P/A: assess the needs of patients with respect to pressure relief and pressure redistribution and movement

P: educate the patients and their relatives in the principles of pressure ulcer prevention and management

A: appreciate the risks of the development of a pressure ulcer to an individual, especially those of a high category

A: appreciate the effects of a pressure ulcer on the individual's psycho-social/behavioural situation

A: recognise the importance of nursing intervention and interactions on pressure ulcer prevention

Unit of study content

- Epidemiology of pressure ulcers
- Pathophysiology of pressure ulcers
- Risk factors
- Prevention strategies for pressure ulcers
- Classification of pressure damage (NANDA/ EPUAP/ NPUAP /PPIAP)
- Differential diagnoses (incontinence associated dermatitis/IAD resp. moisture associated dermatitis/MAD, mycosis, burn)
- Re-positioning strategies
- The role of positioning and pressure redistributing equipment (e.g. pressure relief mattress)
- The adequate supportive (preventive or treatment) position
- Education and movement motivation (keep moving strategy)
- Therapeutic principles (see examples below)

- Conservative therapy
- Pressure relieving therapy
- Surgery and necrectomy (e.g. debridement) after care

- *Practical examples*

Unit 13: diabetic foot syndrome

Aim

This unit of study aims to increase the understanding of the diagnosis, therapy, and prevention of diabetic foot syndrome/disease (DFS).

Learning outcomes

On completion of the unit of study a student will be able to:

K: understand the relationship between pathophysiological processes and changes in the foot

K/P: identify the differences between vascular and neurological manifestations

K/P: recognise the influence of pressure on the development of malum perforans/ neurotrophic ulcers

K/P: categorise changes in the foot using suitable assessment instruments, tools and/or scales

K: differentiate between various types of wounds related to DFS

P: apply investigative and assessment methods and diagnostic measures and analyse the results of the investigation

P: select/evaluate appropriate tools for reducing pressure on the foot and apply them professionally in collaboration with physiotherapist /podiatrist

P: apply the principles of interdisciplinary management that takes into account the multifactorial nature of the treatment depending on type, site, cause of ulcer and comorbidities

P: perform gait analyses and evaluate those with the patient in relation to local competencies and policy (law)

P: design individualised educational programmes for patients (and their family/carers) to include foot self-care to prevent ulceration and wearing appropriate footwear to offload pressure

P: educate and train the patients to use a pressure minimising gait

A: recognise prevention of amputations as an important goal for the treatment

A: be aware of the opportunities and limitations related to podiatric treatment (as the educational background of medical staff entitled podiatrist varies between European countries, the opportunities and limitations should be defined according to the competencies of this group within a specific national setting)

A: be aware of the risks related to reduced perception of the patient (e.g. due to cognitive function impairment) when patient self-care engagement is needed in relation to the DFS management

A: be aware of the risks of sepsis and gangrene.

Unit of study content:

Epidemiology of diabetic foot disease

- Risk factors for ulceration or amputation
- Prevention of complication
- Pathways to ulceration
- Pathways to amputation
- Costs of diabetic foot disease and amputation treatment including follow up costs
- Pathophysiology
 - Neuropathy
 - Ischaemia
 - Clinical presentation of acute and chronic Charcot neuro-arthropathy
 - Infection
- Classification
- Basic and more advanced diagnostics
- Interdisciplinary therapy
- Health-care services for patients with DFS and

the importance of communication

- Principles of therapy
 - Pressure relieving and off-loading options (For example, total contact casting)
 - Management of microbiology
 - Re-vascularisation
 - Amputation and aftercare following minor and major amputation
- Prevention and podiatric care
- Identification and education of high-risk patients
- Podology and podiatric management
- Supportive care and medical devices
- *Practical examples.*

Unit 14: lower leg ulcers

Aim

This unit of study aims to increase the understanding of the common causes of leg ulceration including; diabetic, venous, and arterial (angiology) factors influencing the diagnosis and treatment of lower leg ulcers.

Learning outcomes

On completion of the unit of study a student will be able to:

K: understand the most important aetiological causes for diagnosis and treatment of lower leg ulcers

K: describe the signs and symptoms related to different clinical presentations of ulcers on the lower leg

K: understand indications for use and range of available options for compression therapy

K: investigate the regulations concerning use of compression systems, including supplementary materials

P/K: recognise different manifestations of venous ulcers and differentiate between their aetiologies

P: describe a wound and disease situation using appropriate classification systems

P: apply different types of compression systems based on the specific patient situation and be aware of the potential complications

A: appreciate the specific therapy of the underlying disease as a basic part of the treatment

A: be aware of the need for different actions/interventions depending on the aetiology of a leg ulcer.

Unit of study content

- Classification of types of leg ulcers
- Varicose veins and varicosities
- Peripheral arterial occlusive disease
- Chronic venous insufficiency
- Mixed pathology
- Venous oedema
- Lymphatic oedema
- Pyoderma gangrenosum
- Rare causes of lower leg ulcers
- Prophylaxis/prevention
- The fundamentals of compression therapy (hosiery and bandages)
- Different techniques of compression therapy and practical learning
- Local therapeutic options
- Role of drugs/medication in treatment?

- Surgery

- *Practical examples*

Unit 15: health-care delivery and health economics

Aim

This unit of study aims to increase the ability to explore the legal, financial, and ethical issues related to providing a wound care service, examine the principles of evidence-based practice (EBP), and understand the organisational needs for treating individuals with wounds, including the fundamentals of cost-effective care.

Learning outcomes

On completion of the module a student will be able to:

K: understand and discuss the resources required to deliver an effective wound care service

K: recognise the importance of health economics and providing cost-effective care

K: identify current legislation governing the provision of wound care

K: discuss the importance of reimbursement and its impact on the quality of care

K: understand the role of nurses in clinical trials

K: explore the role of the wound care industry and the potential for collaboration between health-care providers and manufacturers

K: explore the ethical issues surrounding the management of individuals with wounds

K/P: identify legal requirements for specific cases

A: appreciate the process of using different types of dressing in an appropriate way to save costs.

Unit of study content

- Health economics, cost-effectiveness, and budgeting
- Laws governing the provision of health care
- Reimbursement and regulation of health care

- The role of the wound care industry
- Ethics
- Wound management guidelines, standards, and algorithms (local, national, and international)
- Quality improvement strategies
- Principles of research/clinical trial management
- *Practical examples*

Unit 16: documentation

Aim

This unit of study aims to increase the ability to understand and meet the specific documentation requirements related to nursing process in wound management.

Learning outcomes

On completion of the module a student will be able to:

- K:** describe the requirements for assessment and documentation related to wound management
- K:** evaluate different documentation systems for their usefulness and practicality in different clinical settings
- K:** advocate the need for standardised and systematic wound related information in referral letters to other specialities
- K/P:** engage in wound related communication with other institutions with need for nursing documentation, e.g. insurance companies and legal courts (witness statements)

- P:** document the wound characteristics in a particular case according to the specifications
- A:** accept and review the documentation as an important administrative task
- A:** recognise and understand documentation such as significant legislative protection tool.

Unit of study content:

- The relevant minimum data set (MDS)
- Parameters of written documentation (objective scales and their use)
- Non-digital measurement of the wound
- Photography
- Computer-assisted systems (electronic wound registries)
- Exchange of documentation
- Legal issues of data protection
- *Practical examples*

References

- 1 Orem DE. Nursing: Concepts of practice (4th edn). Mosby-Year Book Inc, 1991.
- 2 NANDA International. Defining the knowledge of Nursing. www.nanda.org (accessed 10 November 2017)
- 3 World Health Organization. Chronic diseases are not passed from person to person. They are of long duration and generally slow progression. (http://www.who.int/topics/noncommunicable_diseases/en/)
- 4 NANDA International. Nursing Diagnoses 2015-17: Definitions and Classification, September 2014, Wiley-Blackwell., <https://tinyurl.com/y8lu8lql>

4. Estimated hours and learning methods

The table below provides an overview of the number of hours needed for lectures and practical work under the core units listed in the curriculum:

Unit	Expected workload* per unit of study		Practical work† patient cases	Exam and preparation
	Lectures (contact hours)	Self-directed learning		
UNIT 1: Role of prevention in wound care	4	2	Practical work in special wound clinics/centres or by guiding wound patients (i.e. home care agencies providing wound care) ‡ 50 hours	50 hours
UNIT 2: Evidence-based nursing/ evidence-based practice	8	4		
UNIT 3: Patient education and promoting self-care	12	6		
UNIT 4: Case management (patient centred care)	8	4		
UNIT 5: Wounds and wound Healing	6	3		
UNIT 6: Nutrition and wound healing	4	2		
UNIT 7: Microbiology and wounds	4	2		
UNIT 8: Antimicrobial agents, hygiene and wounds	4	2		
UNIT 9: Debridement and wounds	4	2		
UNIT 10: Moist wound healing	4	2		
UNIT 11: Alternative treatment options for wounds	6	3		
UNIT 12: Pressure ulcers	10	5		
UNIT 13: Diabetic foot syndrome	8	4		
UNIT 14: Lower leg ulcers	10	5		
UNIT 15: Health-care delivery and health economics	4	2		
UNIT 16: Documentation	4	2		
TOTAL	100	50	50	50

Table content specifications

*Workload is an indication of the time students typically need to complete all learning activities required to achieve the expected learning outcomes and will include: self-study and examinations in addition to the lectures and practical work already detailed above. The number of hours can be extended according to local didactical requirements, including the pedagogical assessment of the individual study group and individual student needs.

†A student is expected to work in a wound management unit or similar service for a minimum of three months to gain the relevant level of experience.

‡ Wound management unit/institution, this should be a recognised health-care facility that is responsible for managing patients with wounds. This may include health-care services in primary and secondary care.

The curriculum is recommended to have a total duration of 1–2 years from commencement.

5. Suggested literature

The following list is not an exhaustive list of literature, but includes potential literature for inclusion in the course.

Textbooks

- Baranoski S, Ayello EA (eds). *Wound Care Essentials: Practice Principles* (4th edn). Lippincott, Williams and Wilkins, 2015
- Armstrong DG, Lavery LA (eds). *Clinical Care of the Diabetic Foot*, 2nd Edition. American Diabetes Association, 2010
- Bowker JH, Pfeifer MA. *Levin and O'Neal's the Diabetic Foot*, (7th edn) Mosby Elsevier, 2008
- Bryant R, Nix D. *Acute and Chronic Wounds: Current Management Concepts* (5th edn). Elsevier, 2016
- Percival S, Cutting K (eds). *Microbiology of Wounds*. CRC Press, Taylor Francis Group, 2011
- NANDA International: *Nursing Diagnoses—Definitions & Classification 2015-2016*, Wiley Blackwell, 2014. *Note: this document is updated regularly*
- Flanagan M (ed). *Wound Healing and Skin Integrity: Principles and Practice*. Wiley-Blackwell, 2013
- Kifer ZA. *Fast Fact for Wound Care Nursing*. Springer Publishing Company, 2011
- Krasner D. *Chronic Wound Care: the Essentials*. HMP Communications, 2014
- Phillips CJ. *Health Economics: an Introduction for Health Professionals*. BMJ Books, Blackwell, 2005
- Veves A, Giurini JM, LoGerfo FW (eds). *The Diabetic Foot: Medical and Surgical Management* (3rd edn). Humana Press, 2012

Reviews

- Broughton G, Janis JE, Attinger CE. Wound healing: an overview. *Plast Reconstr Surg* 2006; 117:(7 Suppl) 1e-S–32e-S
- Venus M, Waterman J, McNab I. Basic physiology of the skin. *Surgery* 2011; 29:10, 471–474

Online resources

- Agency for Healthcare Research and Quality <https://www.ahrq.gov>
- Cochrane Library <http://www.thecochranelibrary.com/view/0/index.html>
- European Wound Management Association (EWMA) www.ewma.org/english/publications.html
- European Pressure Ulcer Advisory Panel (EPUAP) <http://www.epuap.org/guidelines/>
- International Skin Tear Advisory Panel (ISTAP) <http://www.skintears.org/>
- National Institute of Health and Care Excellence (NICE) <http://www.nice.org.uk/guidance/cg179>
- National Pressure Ulcer Advisory Panel (NPUAP) <http://www.npuap.org/>
- Scottish Intercollegiate Guideline Network <http://www.sign.ac.uk/guidelines/fulltext/120/index.html>

- Welsh Wound Network <http://www.welshwoundnetwork.org/en/awtv-nurses-forum/>
- World Union Wound Healing Societies Consensus Guidelines <http://www.wuwhs2016.com/documents>
- Wounds Australia (formerly Australian Wound Management Association) Guidelines <http://www.awma.com.au/publications>
- Wounds International <http://www.woundsinternational.com>
- Wounds UK Best Practice Statements <http://www.wounds-uk.com/best-practice-statements>
- Wilkinson JM. *Nursing process—a critical thinking approach*. Pearson, 1995.
- European Commission. Learning opportunities and qualifications in Europe. Information about courses, work-based learning and qualifications. <https://ec.europa.eu/ploteus/en/content/descriptors-page>
- European Commission. European credit transfer and accumulation system. http://ec.europa.eu/education/resources/european-credit-transfer-accumulation-system_en
- ECTS Users Guide http://ec.europa.eu/education/ects/users-guide/index_en.htm
- NPUAP, EPUAP, PPPIA. *Prevention and treatment of pressure ulcers: quick reference guide*. Haesler E (ed). Cambridge Media, 2014

EWMA documents

- Franks P, Barker J, Collier M et al. Management of patients with venous leg ulcer: challenges and current best practice. *J Wound Care* 2016; 25(6 Suppl):1–67
- Price P, Gottrup F, Abel M. Study recommendations for clinical investigations in leg ulcers and wound care. *J Wound Care* 2014; 23(5): S1–S36.
- Probst S, Seppänen S, Gethin G et al. EWMA document: home care-wound care. *J Wound Care* 2014; 23(5 Suppl.):S1–S44
- Gottrup F, Apelqvist J, Bjansholt T et al. EWMA document: antimicrobials and non-healing wounds—evidence, controversies and suggestions. *J Wound Care* 2013; 22(5 Suppl.): S1–S92
- Strohal R, Apelqvist J, Dissemond J et al. EWMA Document: debridement. *J Wound Care* 2013; 22(Suppl. 1): S1–S52
- Gottrup P, Apelqvist J, Price P. Outcomes in controlled and comparative studies on non-healing wounds: recommendations to improve the quality of evidence in wound management. *J Wound Care*. 2010; 19(6):237–268
- EWMA. Position document: management of wound infection. MEP Ltd, 2006
- EWMA. Position document: identifying criteria for wound infection. MEP Ltd, 2005
- EWMA. Position document: wound bed preparation in practice. MEP Ltd, 2004.
- EWMA. Position document: pain at wound dressing changes. MEP Ltd, 2002

6. Glossary

Assessment:

In this curriculum, assessment refers to the clinical patient and wound assessment that will encompass history taking and overall holistic examination of a patient with a wound as well as local status (wound and periwound skin).

Angiology:

Angiology is a medical specialty which studies the diseases of the circulatory system and of the lymphatic system, i.e., arteries, veins and lymphatic vases, and its diseases.

Antiphlogistic:

An agent that reduces inflammation.

Case management:

Case management is a general term referring to the facilitation of treatment plans to assure the appropriate medical care is provided.

Charcot neuro-arthropathy:

Charcot neuro-arthropathy refers to progressive degeneration of a weight bearing joint, a process marked by bony destruction, bone resorption, and eventual deformity.

Debridement:

Debridement is the process of removing non-vital tissue from different types of wounds such as pressure ulcers (PU), burns and others.

Evidence-based nursing (EBN):

EBN is an approach based upon personal clinical expertise in combination with the most current, relevant research available on the topic. The goal of EBN is to improve the health and safety of patients while also providing care in a cost-

effective manner to improve the outcomes for both the patient and the health-care system.

Evidence-based practice (EBP):

EBP is an approach which goal is to integrate the implementation of the best research evidence with clinical expertise and patient values.

European credit transfer and accumulation system (ECTS):

ECTS is a standard for comparing the study attainment and performance of students of higher education across the EU and other collaborating European countries. One academic year corresponds to 60 ECTS credits that are normally equivalent to 1500–1800 hours of total workload, irrespective of standard or qualification type.

EQF (european qualifications framework):

The EQF aims to relate different countries' national qualifications systems to a common European reference framework and to compare the qualifications levels of different countries and different education and training systems. Since 2012, all new qualifications issued in Europe carry a reference to an appropriate EQF level <https://tinyurl.com/hkca4mg>

European Wound Management Association (EWMA):

EWMA is a European not-for-profit umbrella organisation, linking national wound management organisations, individuals and groups with interest in wound care. Central to EWMA's objectives is to support implementation of interdisciplinary and cost effective wound care of high quality (www.ewma.org).

European Pressure Ulcer Advisory Panel (EPUAP):

EPUAP is a European organisation working for European research, education and advocacy for PU prevention and treatment. The mission is to provide the relief of persons suffering from or at risk of PUs, in particular through research and the education of the public and by influencing PU policy in all European countries towards an adequate patient centred and cost-effective PU care (www.epuap.org).

Incontinence associated dermatitis (IAD):

IAD is inflammation of the skin that occurs when urine and/or stool comes into contact with the skin.

MAD (moisture associated dermatitis):

Inflammation and erosion of the skin caused by prolonged exposure to moisture and its contents, including urine, stool, perspiration, wound exudate, mucus, or saliva.

Maggot therapy:

Maggot therapy (also called bio-knife) is a type of biotherapy involving the introduction of live, disinfected maggots (fly larvae - *Lucilia serricata*) into the non-healing skin and soft tissue into a wound for the purpose of cleaning out the necrotic tissue within a wound (debridement) and disinfection.

Malum perforans:

Malum perforans, also known as neurotrophic ulcer, is a long-lasting, usually painless ulcer that penetrates deep into or through the skin, usually on the sole of the foot. It is often a complication in diabetes and other conditions affecting the nerves.

MDS (minimal data set):

MDS is a list of names, definitions and sources of data items needed to support a specific purpose.

MRSA

(Meticillin-resistant *Staphylococcus Aureus*): MRSA infection is caused by a type of *Staphylococcus*

bacteria that has become resistant to many of the antibiotics used to treat ordinary staph infections.

NANDA Int.:

NANDA is an international organisation providing standardised terminology/NANDA International Nursing Diagnosis Glossary of Terms for use in nursing practice (www.nanda.org/).

Nosocomial infection:

A nosocomial infection, also known as a hospital-acquired infection (HAI), is an infection that is acquired in a hospital or other health-care facility.

National Pressure Ulcer Advisory Panel (NPUAP):

NPUAP is an US-based independent not-for-profit professional organisation dedicated to the prevention and management of PU (www.npuap.org).

Negative pressure wound therapy (NPWT):

NPWT is a therapeutic technique using a vacuum dressing to promote healing in acute or chronic wounds and enhance healing. In several types of either acute or chronic/non-healing wounds.

Nursing diagnoses:

The nursing diagnosis drives interventions and patient outcomes, enabling the nurse to develop the patient care plan. Diagnosis procedures are provided by different professional organisations e.g. NANDA.

Podiatrist/podiatric management:

In many countries the term podiatrist refers to allied health professionals who specialise in the treatment of the lower extremity, particularly the foot. Podiatrists in these countries are specialists in the diagnosis and treatment of foot pathology, but not through surgical means. In the US and some other countries, Doctors of Podiatric Medicine are physicians and surgeons who practice on the lower extremities, primarily on feet and ankles.

Podology:

The speciality concerned with the diagnosis and/or medical, surgical, mechanical, physical, and adjunctive treatment of the diseases, injuries, and defects of the human foot. May also be referred to as chiropody.

Post graduate education:

Post graduate refers to education taking place following the finalisation of a general nurse education (See Registered nurse).

Pan Pacific Pressure Injury Alliance (PPIAP):

The PPIAP has contributed with the EPUAP and NPUAP to publishing of the International Pressure Ulcer Guidelines.

Pyoderma gangrenosum:

Pyoderma gangrenosum is a rare skin condition that causes tissue becoming necrotic. Major symptoms include small pustules that develop into large ulcers at various sites on the body. It may or may not be associated with other illnesses. It often, but not invariably, reflects underlying systemic disease.

Registered nurse:

The definition of a registered nurse across Europe is governed by EU law through directives/EU legislation (Directive 2005/36/EC on the recognition of professional qualifications). A registered nurse is a nurse who has graduated from a nursing programme and met the requirements outlined by a country, state, province or similar licensing body in order to obtain a nursing license. A registered nurse's scope of practice is determined by legislation, and is regulated by a professional body or council.

Total contact casting (TCC):

TCC is a specially designed cast designed to take weight off of the foot (off-loading) in patients with diabetic foot ulcers (DFU) (see wounds).

Ulcer:

Ulcer typically refers to a chronic/non-healing wound; e.g. a pressure ulcer, a diabetic foot ulcer or a leg ulcer (venous/arterial/mixed). An ulcer is defined as a discontinuity or break in a bodily membrane that impedes the organ of which that membrane is a part from continuing its normal functions. An ulcer is often accompanied by the disintegration of tissue and ulcers often become infected.

The European Union of Medical Specialists (UEMS):

UEMS is the representative organisation of the National Associations of Medical Specialists in the EU and its associated countries (www.uems.net).

Undergraduate education:

Undergraduate nursing education refers to educational programmes for pre-registration nurses.

Wound:

This curriculum covers the management of both chronic/non-healing/hard-to-heal and acute wounds.

Acute wounds occur as a result of surgery or trauma. They move through the stages of healing within the predicted timeframe. The acute wound becomes a chronic wound when it does not follow the healing stages resulting in a lengthened recovery.

Chronic, non-healing or hard to heal wounds refers to wounds that for various reasons do not heal normally/are characterised by a delayed healing process which may be caused by different aetiologies. The most common types of chronic/non-healing/hard-to-heal wounds include:

- Leg ulcers (LU) (arterial, venous, mixed)
- PU (also referred to as pressure injuries, pressure sores or decubitus)
- DFU (diabetic foot syndrome, DFS)