EWMA Educational Development Programme

Curriculum Development Project

Education Module:

Physiology of wound healing & tissue repair

Latest revision: May 2012
**About the EWMA Educational Development Programme**

The Programme is designed to assist students and healthcare professionals who work with patients with wounds and related skin conditions and wish to develop and/or increase their knowledge and skills in order to meet patient needs.

Overall, the Programme aims to:

- Provide students and healthcare professionals with the knowledge and skills to equip them to perform their role in the delivery of optimal wound care.
- Provide contemporary, interdisciplinary, product/brand neutral wound management education that is endorsed by EWMA.
- Provide quality standards against which other organisations can evaluate existing wound management programmes.
- Achieve European acceptance by developing an educational framework that is in line with European Commission educational initiatives in order to disseminate best practice in wound care.

**About the Curriculum Development Project**

The Curriculum Development Project is at the heart of the Educational Development Programme. The aim of the Project is to develop a flexible curriculum, consisting of a number of modules. All modules are based on a standard template but individually focused on a specific aspect of wound management. Each module is developed by a small group consisting of members of the EWMA Education Committee and/or affiliated wound care key specialists. For an updated list of the currently available modules please visit the education sub page at [www.ewma.org](http://www.ewma.org).

**About this Module**

The Physiology of wound healing / tissue repair module aims to:

- Provide students up to date knowledge of skin and tissue anatomy, biology and biochemistry.
- Provide students up to date knowledge of skin and tissue physiology and healing processes.
MODULE CONTENT

1. Elaborating Body
   European Wound Management Association (EWMA)

2. Date of production of module
   January 2003

3. Latest review date
   May 2012

4. Module intended learning outcomes
   This module provides opportunities for health professionals to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas:

   A. Intellectual Skills – Knowledge and Understanding
   Participants will have knowledge of:
   1. Healthy skin and tissue anatomy and physiology.
   2. Skin and tissue reactions in relation to acute and chronic wounds and ulcers.
   4. Wound physiology in relation with age, type and aetiology of wounds.
   5. The different methods of assessment of patients with wounds ‘at risk’ for infections and poor wound healing.
   6. Preventing wounds due to physiologic or anatomic disorder.
   7. Following up wound healing on an objective and statistic way.
   8. Setting up an appropriate treatment procedure.
   9. Health economics related to wounds and wound healing.

   B. Practical Skills – Skills and Attributes:
   Participants will be able to:
   1. Make valid prognoses of wound healing evolution identifying the specific factors that increase risk status (could be potential or actual).
   2. Recognize different wound healing stadia.
   3. Undertake actions of prevention to diminish wounds, bad wound healing and wound stagnation.
5. Demonstrate appropriate documentation skills detailing latest scientific information on wound healing and wound physiology.
6. Demonstrate an ability to communicate with and educate patients and carers pertaining wound healing and wound physiology.

5. Teaching/learning methods & strategies

Acquisition of 4.A & 4.B (see above) is through a combination of lectures, small group workshops and learning in practice throughout the module. There is also the possibility of using e-learning in combination with traditional learning methods. Throughout, the learner is encouraged to undertake independent study to both supplement and consolidate what is being taught/learnt and to broaden individual knowledge and understanding of the subject.

6. Assessment methods

Assessment methods will need to vary for each professional group. Understanding will be assessed in a variety of ways e.g. open discussion, formal written exercises, case studies, practice work-books. Throughout, the learner is expected to consolidate the development of practical skills / management skills in the clinical setting.

7. Unit content

A. Overview / epidemiology
The prevalence and incidence of acute and chronic wounds and associated skin damage.
Methodology of epidemiological studies.
National/International principles, procedures and protocols about how to approach wounds.
The health economic costs associated with wounds and wound treatment.

B. Anatomy
Anatomy of the skin and related structures within the different ages of patient groups.

C. Pathophysiology
The aetiology and physiology of acute and chronic wounds.
Risk factors associated with wound healing.
The physiology of normal and disturbed wound healing.
The difference between acute (healing) and chronic (hard to heal) wounds.
Biochemical problems related to wound healing.

D. Principles of patient care
Assessment – physical, psychological, social.
Identification of patient centred management objectives.
Care planning.
Evaluation of outcomes.
Use of evidence based practice/clinical guidelines.
Referral criteria.
Interdisciplinary team working.

**E. Assessment**

General assessment process including photography and wound evolution analysis.
Specific assessment – wound assessment including the use of schemes and methods of wound assessment including TIME D an H.
Reliability and validity of assessment tools.
Skin assessment – skin resilience.

**F. Risk factor management**

Prevention – auditing / monitoring skin problems and risks.

**G. Prevention of wounds and bad wound healing**

Prevention strategies including dressing choice and influencing wound true dressings ointments and wound care products e.g. light, shockwave, temperature, TNP therapies.
Skin care such as the use of emollients.
Nutritional support in preventing bad wound healing.
Use of guidelines and evidence-based practice in prevention of bad wound healing.
The role of the multi-professional team in preventing bad wound healing.

**H. Wound management**

Management strategies for wounds including the use of wound management products and adjunct therapies adapted to the stage of the wounds.
The use of guidelines and evidence-based practice to treat acute and chronic wounds.
Assessment of wound bed and surrounding skin.
Principles of cleansing and in case disinfection.
Selection of cleansing agents and topical antiseptics.
Debridement and wound bed preparation including surgical debridement, dressings promoting autolytic debridement, use of bio surgery and topical negative pressure therapy.
Dressing selection including product availability relative to local circumstances and different healthcare settings.
Advanced wound care products/techniques.
Pain management to ensure effective assessment and evaluation of outcomes including the use of analgesia.

Care of the surrounding skin e.g. the use of protective skin wipes.

Evidence base to support complementary wound therapies e.g. aromatherapy, acupuncture.

I. Management of infection
Assessment /presentation - clinical signs/symptoms, silent infection.
Superficial infections and cellulites.
Deep infections - surgical drainage.
Methods of identify infecting agents - culture and swab techniques, biopsy.
Radiological and other investigations – Isotope scans, Magnetic Resonance Scans.
Use of topical antiseptics - indications, type and duration of treatment.
Adjunct therapies and their relevance and practical application.

J. Specialist interventions
The use of surgery to treat acute and chronic wounds.

K. Systematic and local pharmacological management
Analgesia e.g. local, systemic.
Nutritional supplements e.g. mineral and vitamin supplementation.
Antibiotic therapy for infection - indications, type and duration of treatment.

L. Rehabilitation services
Structure and management of rehabilitation services.
Integrated hospital and community care.
Inter-disciplinary, multi-professional approach.
Patient follow-up services.

M. Psychosocial aspects of care
Impact of pressure ulcers on the individual & society.
Factors affecting compliance with treatment including case examples of individuals who have effectively failed to comply with treatment strategies.
Effective patient education strategies.
8. Unit specific learning resources

**Web links**

- [www.ewma.org](http://www.ewma.org) – position documents available in a range of European languages
- [www.etrso.org](http://www.etrso.org)
- [www.ncchta.org](http://www.ncchta.org) - 10 systematic reviews relating to chronic wounds

**Cochrane Library**

**Journals**

- Advances in Skin and Wound Care
- Journal of Tissue Viability
- Journal of Wound Care

**Books**

- CARRICO T.J. e.a.: Biology of wound healing Surgical Clinics of North America Vol 64. no. 4 Aug. ’84 p 721- 733
- SCHILDBERG FW ea Wound healing and wound management; Springer verlag 1994, pp156.