



EWMA Educational Development Programme

Curriculum Development Project

**Education Module:**

**Assessment & Management of the Diabetic Foot**

Latest review: August 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 Assessment & Management of the Diabetic Foot module aims to:

- Broaden participants' knowledge and understanding of the assessment and management of diabetic foot complications and associated diseases.
- Evaluate strategies to promote effective inter-professional collaborative working for patients with diabetic foot complications.



## **MODULE CONTENT**

### **1. Elaborating Body**

European Wound Management Association (EWMA)

### **2. Date of production of module**

January 2003

### **3. Latest review date**

August 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 the:

1. Pathophysiology of the diabetic foot.
2. Diagnosis/assessment of the “at risk foot”.
3. Importance of diabetes management and cardiovascular risk factor modification on the diabetic foot.
4. Management strategies for diabetic foot ulceration including: wound bed preparation; dressing choice; pain management; skin care; off loading; footwear provision & preventative interventions.
5. Evidence based treatments available for the management of diabetic foot complications and associated diseases.
6. Organisation of DFU services and interdisciplinary team working.

#### **B. Practical Skills – Skills and Attributes:**

Participants will be able to:

1. Differentiate between ischemia and neuropathy in the diabetic foot.
2. Identify characteristics of the “at risk foot”.



3. Identify and manage clinical signs of infection in the diabetic foot.
4. Make effective treatment decisions, initiate further investigations and know when to refer to specialist services.
5. Identify the psychological impact that the diabetic foot ulceration has on the individual and society.
6. Evaluate the provision of local diabetic foot ulceration services, including multi-disciplinary services.

### **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 both to supplement and consolidate what is being taught 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 i.e. 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**

Incidence and prevalence data for diabetes and diabetic foot complications

National/International guidelines and targets (St Vincent Declaration and others)

Health needs assessment

Economic costs

#### **B. Anatomy of foot and lower limb**

Skeletal - foot architecture/ function in health and disease – Charcot foot

Neurological - neuroanatomy of the lower limb, nerve fibre types

Vascular - macro-circulation, micro-circulation



Skin and associated structures

**C. Pathophysiology**

Neurological – pathological changes

Vascular – macro-circulation, micro-circulation

Foot architecture/ function in health and disease – Charcot foot

Biomechanics of the foot – pressure profiling, foot shape, gait/walking pattern, off-loading and footwear

**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

Inter and multi-disciplinary team working

**E. Assessment of the “at risk foot”**

General assessment process – (e.g., Wagner classification and other communication aids for the diabetic foot)

Differential diagnosis inter-relationship of ischemia and neuropathy

Neurological testing - use of objective measuring tools, monofilaments and the biothesiometer, vibration perception, tactile sensation and discrimination and reflexes

Vascular assessment - use of the hand-held Doppler, ABPI and toe pressures, TcPO<sub>2</sub> and laser Doppler

Assessing arthropathy - deformities, bony prominences and joint mobility

Investigations – probe to bone, plain radiographs, Magnetic Resonance scans and isotope bone scans

Assessing skin and callus including nails, presence of dryness, cracking and inter-digital maceration



Assessment of footwear and hosiery

**F. Risk factor management**

Diabetic control

Importance of obesity management in prevention of neuropathy and vasculopathy

Nutritional assessment/management

Management of oedema - prevention and symptomatic control

Neuropathy management - prevention and symptomatic control

Vascular management – smoking, lipids, hypertension

Skin & callus management - prevention of skin cracking and callus formation

Patient education – hygiene, inspection, temperature and trauma avoidance

**G. Wound management for diabetic foot ulcers**

Management strategies for diabetic foot ulcers including the use of wound management products and adjunct therapies

The use of guidelines and evidence-based practice to treat diabetic foot ulcers

Assessment of wound bed, surrounding skin and associated structures

Principles of cleansing

Selection of cleansing agents

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

Management of odour/exudates

Advanced wound care products/techniques

Pain management - importance of pain control even in presence of neuropathy

Care of the surrounding skin - protection and prevention of maceration.

Off loading with open wounds - available methods including Scotch cast, windowed casts and

Aircast Footwear - appropriateness, shoe shape and fitting.



## **H. Management of infection**

Assessment / presentation – e.g. 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

Antibiotic therapy - indications, type and duration of treatment

Use of topical antiseptics - indications, type and duration of treatment

Adjunct therapies and their relevance and practical application

## **I. Specialist Interventions**

Vascular investigations and management

Corrective orthopaedic surgery

Plastic and reconstructive surgery

Amputation

Rehabilitation services

## **J. Systematic and local pharmacological management**

Use of:

- Steroids
- ACE inhibitors, antiplatelet agents, statins
- Analgesia
- Antibiotics/antimicrobials
- Antipruritics
- Emollients and barrier creams.

## **K. Foot care services**

Structure and management of foot care services

Integrated hospital and community care

Database and recall systems



Multi-disciplinary, multi-professional approach

Follow-up stratified policy according to risk

Patient involvement in care

#### **L. Psychosocial aspects of care**

Impact of diabetic foot ulceration on individual & society

Factors affecting adherence to treatment

Effective patient education strategies- smoking, diet, lipids, hypertension, foot care, footwear

### **8. Unit specific learning resources**

#### **Books/Book chapters**

Edmonds M and Foster A (2012) Managing the Diabetic Foot: 3<sup>rd</sup> Edition. Publisher Wiley-Blackwell (an imprint of John Wiley & Sons Ltd) ISBN 9780470655054

#### **Journals**

Diabetes

Diabetic Medicine

Diabetes Care

Diabetes Metabolism: Research and Reviews

International Journal of Lower Extremity Wounds (Sage Scientific Publications)

The Foot in Diabetes

The Diabetic foot

#### **Papers**

- Apelqvist J (2012) Diagnosis and treatment of the diabetic foot. Endocrine Volume 41, Number 3 (2012), 384-397, DOI: 10.1007/s12020-012-9619-x
- Diabetes Metab Res: Volume 28 Issue S1 (February 2012) Supplement: Proceedings of the Sixth International Symposium on the Diabetic Foot, 10-14 May 2012, Noordwijkerhout, The Netherlands



- Dorresteijn JAN, Kriegsman DMW, Valk GD. (2010) Complex interventions for preventing diabetic foot ulceration. Cochrane Database of Systematic Reviews 2010, Issue 1. Art. No.: CD007610. DOI: 10.1002/14651858.CD007610.pub2
- Dorresteijn JA N, Kriegsman DM W, Assendelft WJJ, Valk GD. (2010) Patient education for preventing diabetic foot ulceration. Cochrane Database of Systematic Reviews 2010, Issue 5. Art. No.: CD001488. DOI: 10.1002/14651858.CD001488.pub3
- Dumville JC, O'Meara S, Deshpande S, Speak K. (2012) Alginate dressings for healing diabetic foot ulcers. Cochrane Database of Systematic Reviews 2012, Issue 2. Art. No.: CD009110. DOI: 10.1002/14651858.CD009110.pub2
- Edwards J, Stapley S. (2010) Debridement of diabetic foot ulcers. Cochrane Database of Systematic Reviews 2010, Issue 1. Art. No.: CD003556. DOI:10.1002/14651858.CD003556.pub2
- Selva Olid A, Barajas-Nava LA, Gianneo OD, Solà I, Bonfill Cosp X, Lipsky BA.(2011) Systemic antibiotics for treating diabetic foot infections. Cochrane Database of Systematic Reviews, Issue 4. Art. No.: CD009061. DOI: 10.1002/14651858.CD009061

### **Web links**

<http://www.diabetic-foot-consensus.com/>

<http://www.diabeticfoot.org.uk/>

<http://www.show.scot.nhs.uk/sign/guidelines/fulltext/55/section7.html>

<http://www.nlm.nih.gov/medlineplus/tutorials/diabetesfootcare/db029101.html>

<http://www.nursing-standard.co.uk/archives/vol14-12/cpd.pdf>

<http://www2.york.ac.uk/inst/crd/ehc54warn.htm>

### **9. EWMA specific regulations**

In order to achieve EWMA accreditation/certification the following conditions must be satisfied and the following provided:

- Suitable teaching venue i.e. educational institution, hospital, clinic;
- Adequate learning resources i.e. audio-visual aids;



- Delivery pattern suitable to target audience i.e. day release, evening, study blocks;
- A module/course leader who is responsible for overall management/ organisation;
- Appropriate administrative support;
- All presenters must have appropriate expertise to deliver content pertinent to the specialist area;
- Educational content must present a balanced overview of all aspects of treatment modalities;
- Educational content and materials must be product/brand neutral;
- Educational content must be separated from any promotional activity;
- A register of attendance must be maintained by the local host;
- Participants will only be eligible for a certificate of attendance if they have attended the entire taught component and have completed an evaluation form.