



UNION EUROPÉENNE DES MÉDECINS SPÉCIALISTES
EUROPEAN UNION OF MEDICAL SPECIALISTS

Thematic Federation Wound Healing



THE CURRICULUM WAS DEVELOPED IN COLLABORATION WITH
THE EUROPEAN WOUND MANAGEMENT ASSOCIATION (EWMA).

CURRICULUM/SYLLABUS: FUNDAMENTALS IN WOUND HEALING FOR PHYSICIANS

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INTRODUCTION

AIM

Despite the fact that patients with chronic hard-to-heal wounds are a typical, almost daily, part of medicine, they still constitute a specific challenge for the treating physician. Consequently, we believe that the essential aspects of this medical field should be familiar to all physicians, but in particular those who deal with wounds regularly as a result of their specialisation.

To optimise the treatment of patients with chronic wounds, physicians must be able to select therapy appropriate to the underlying aetiology as well as the correct local therapeutic measures. The curriculum presented here aims to ensure that physicians involved in wound care have a sufficient level of expertise within the area to provide efficient and safe treatment of their patients.

OBJECTIVES

The objective is to provide a curriculum that includes the fundamentals of the medical field of wound healing as well as information on the different pathogenetic causes of chronic wounds, clinical assessment, development of therapeutic concepts, wound prevention, and collaboration with other specialists, nurses, and health care providers dealing with this patient population.

The curriculum should support the relevance and value of interdisciplinary team work with regards to optimising treatment for all patients with wounds.

FORMAT

The curriculum summarises necessary knowledge related to the medical field of wound healing that is suggested for inclusion in the broad post-graduate training programme for general practitioners, angiologists, diabetologists, dermatologists, general surgeons, plastic surgeons, geriatricians and vascular surgeons. This curriculum should be adapted to the content of the relevant post-graduate training programme in which it is included.

As this curriculum is proposed for incorporation into existing programmes in different European countries, specific details of the teaching and learning methods and 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.

TARGET GROUPS

The target groups include general practitioners and medical specialists dealing with patients with wounds, as listed above.

STRUCTURE AND TIME FRAME

This curriculum is intended for inclusion in the general 4-year postgraduate medical education. Through this education programme, the physician should receive in the region of 80 hours of theoretical instruction provided by seminars. Furthermore, the physician in training should manage a caseload of 100 patients

with complex chronic wound problems. The practical training should be carried out under the supervision of a specialist.

These patient cases must include a minimum of 100 patients with the following types of chronic wounds:

- Diabetic foot ulcers
- Venous ulcer
- Arterial ulcer
- Mixed ulcer; i.e., those with arterial and venous disease
- Pressure ulcer

It is recognised that parts of the curriculum presented here may already be included as primary items in the postgraduate medical education for certain medical specialties (e.g., phlebology for dermatologists and angiologists). Thus, this curriculum should be considered a complete list reflecting all the competencies needed for a physician to provide high-quality wound care, and items that are already covered in the main speciality of the relevant group of physicians may be excluded.

The learning objectives listed under the various units define the required level of:

K: Knowledge/theoretical skills

P: Pragmatic skills/application of knowledge

A: Awareness/behaviour

Learning objectives listed as '**K:** Knowledge/theoretical skills' should be tested by an examination.

Skills listed as '**P:** Pragmatic skills' should be tested in a practical manner as a clinical skill.

Skills listed as '**A:** Awareness' will be assessed as an integrated part of the skills related to practice.

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

SUGGESTED LITERATURE

TEXTBOOKS

- Ayello EA and Baronoski S (Ed) Wound Care Essentials: Practice Principles. 4ed (in press). LWW
<http://www.lww.com/Product/9781451113044>
- Bryant, R.A. ed Acute and Chronic Wounds: Current Concepts 3ed St Louis: Mosby
- <http://books.google.co.uk/books?hl=en&lr=&id=ma9XAQAAQBAJ&oi=fnd&pg=PP1&dq=Bryant,+R.A.+ed+Acute+and+Chronic+Wounds:+Current+Concepts+3+ed+St+Louis:+Mosby&ots=JlIE9D1a36&sig=MUtuD39FZMpkwRMIzgb6cck4wc8#v=onep->

age&q=Bryant%2C%20R.A.%20ed%20Acute%20and%20Chronic%20Wounds%3A%20Current%20Concepts%203%20ed%20St%20Louis%3A%20Mosby&f=false Flanagan M (ed) Wound Healing and Skin Integrity: Principles and Practice

ISBN: 978-0-470-65977-9 April 2013, Wiley-Blackwell <http://eu.wiley.com/WileyCDA/WileyTitle/productCd-0470659777.html>

REVIEWS

- Broughton G, Janis J E, Attinger CE, Wound Healing: An Overview, *Plast. Reconstr. Surg.* 117: 1e-S, 2006
- Venus M, Waterman J, McNab I: Basic physiology of the skin, *SURGERY* 29:10, 2011

ONLINE RESOURCES – GUIDELINES, BEST PRACTICE STATEMENTS, CONSENSUS DOCUMENTS

- Agency for Healthcare Research and Quality
<http://www.guideline.gov/content.aspx?id=36081>
<http://www.guideline.gov/content.aspx?id=24361>
- Australian Wound Management Association Guidelines <http://www.awma.com.au/publications/>
- Cochrane Library <http://www.thecochranelibrary.com/view/0/index.html>
- European Wound Management Association <http://ewma.org/english/publications.html>
- European Pressure Ulcer Advisory Panel <http://www.epuap.org/guidelines/>
- International Skin Tear Advisory Panel <http://www.skintears.org/>
- National Institute of Health and Care Excellence <http://www.nice.org.uk/guidance/cg179>
- National Pressure Ulcer Advisory Panel <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.woundsinternational.com/associations/world-union-of-wound-healing-societies>
- Wounds International Clinical Guidelines <http://www.woundsinternational.com/clinical-guidelines>
- WoundsUK Best Practice Statements <http://www.wounds-uk.com/best-practice-statements>

THEORETICAL KNOWLEDGE

UNIT 1: WOUNDS AND WOUND HEALING

Aim: This unit of study aims to increase the physician's knowledge and understanding of cellular and molecular mechanisms involved in normal wound healing.

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

- **K:** Explain the pathophysiology of normal wound healing;
- **K:** Define chronic wounds based on their characteristics and causes;
- **K:** Differentiate between different wound healing disorders;
- **K:** Discuss the process of coagulation and factors that may affect normal haemostasis;
- **K:** Describe the phases of wound healing;
- **K:** Summarise the process responsible for the formation of granulation tissue;
- **K:** Define different types of healing;
- **K:** Discuss the role of the major cells and cytokines involved in the process of normal wound healing;
- **P:** Relate the stages of normal healing to the clinical presentation of a wound;
- **P:** Relate wounds to the causes of chronic wounds.
- **A:** Understand the wound healing pathophysiology as a starting point for treatment, recognition of type of wound bed etc.

Unit of study content

- Pathophysiology of normal wound healing
 - Blood coagulation (effect of anticoagulation substances on wound healing)
 - Phases of wound healing, i.e., inflammation, proliferation, and remodelling
 - Formation of extracellular matrix collagen and granulation tissue
 - Cells with an important role in the healing wound (endothelial cells, macrophages, fibroblasts, mast cells, etc.)
 - Primary wound healing
 - Partial thickness healing (a regeneration process)
 - Secondary wound healing (a repair process)
 - Delayed primary closure
- ☞ Practical examples

UNIT 2: NUTRITION AND WOUND HEALING

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

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;
- **P:** Conduct a nutrition assessment and prepare a nutrition plan for the patient;
- **A:** Rate nutrition as an important component in wound therapy.

Unit of study content

- Caloric needs of patients with an acute or a chronic wound
 - Specific requirements of individuals with diabetes
 - Hypermetabolic conditions that affect nutritional requirements, e.g., infection, stress, and trauma
 - Optimal nutritional composition to promote wound healing
 - Function of nutrients, including vitamins, proteins, and minerals
 - Parenteral and enteral forms of nutritional supplementation
 - Nutritional assessment and nutritional screening tools
 - Affects of malnutrition on wound healing
 - Signs and symptoms of dehydration
 - Anthropometric measurements
 - Biochemical data and interpreting laboratory values
 - Role of nutrition in the prevention of wounds
 - Role of the dietician
- ☞ Practical examples

UNIT 3A: MICROBIOLOGY AND WOUNDS

Aim: This unit of study aims to increase the physician's understanding of the nature of infections in wounds.

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;
- **P:** Identify wounds with high risk of infection and typical causes of infection;
- **P:** Initiate hygienic and therapeutic measures for multidrug resistant germs;
- **P:** Interpret microbiological test results and identify possible further requirements;
- **A:** Understand the particular problems related to resistant germs in wound healing.

Unit of study content

- Contamination, colonisation, and local or systemic infection
 - The wound at risk of infection
 - Problematic and non-problematic germs
 - The nature of methicillin-resistant *Staphylococcus aureus* (MRSA) and other multidrug resistant bacteria
 - Procedures for MRSA and other multidrug resistant bacteria
 - Prophylaxis and epidemiology with regard to MRSA and other multidrug resistant bacteria
 - Assessment and diagnosis of infection
 - Surgical site infection
 - Biofilms
 - Role of microbiological culture techniques
- ☞ Practical examples

UNIT 3B: ANTIMICROBIAL AGENTS, HYGIENE, AND WOUNDS

Aim: This unit of study aims to increase the physician's understanding of the nature of antimicrobial therapy and prophylaxis.

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 indications for local antiseptic and systemic antibiotic therapy;
- **K:** Outline the criteria for application of specific 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;
- **P:** Analyse and meet the requirements related to antimicrobial therapy in practice;
- **A:** Understand their key role and responsibility as physicians with regard to aspects of hygiene.

Unit of study content

- Antiseptics
 - Systemic antibiotics
 - Antimicrobial wound dressings
 - Hygiene and dressing change
 - Disinfection und sterilisation
- ☞ Practical examples

UNIT 4: DEBRIDEMENT AND WOUNDS

Aim: This unit of study aims to increase the physician's understanding of the role of debridement as an integrated part of wound management.

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

- **K:** Explain the reasons for use of debridement;
- **K:** Describe, classify, and use the various debridement techniques;
- **P:** Evaluate the different debridement methods and their effect and risk factors in practice;
- **P:** Choose between different methods of debridement based on evaluation of the individual wound and patient situation in addition to cost effectiveness measures.
- Relate the impact of the patient's health status and local wound factors that influence the most appropriate debridement method in clinical practice

Unit of study content

- Basic introduction to debridement: definition and indications
 - Mechanical debridement
 - Autolytic, enzymatic, and absorptive debridement, including honey
 - Larvae therapy
 - Technical solutions
 - Sharp and surgical debridement
 - Pain management (local/systemic analgesia) as part of debridement
- ☞ Practical examples

UNIT 5: MOIST WOUND HEALING

Aim: This unit of study aims to increase the physician's understanding of the appropriate use of different wound dressings in relation to the phase of wound healing.

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:** Understand 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;
- **K:** Define the product characteristic indications for wound therapy;
- **P:** Apply the products correctly;
- **P:** Evaluate and select products taking into account the patient's quality of life;

- **P:** Select among the available therapeutics in practice, based on indications/contraindications, health economic aspects, and the preferences of the individual patient;
- **A:** Understand health economic aspects of wound healing (cost effectiveness measures).

Unit of study content

- Basics of moist wound therapy and phase-related therapy
- Ideal wound dressings
- The nature of wound gauze
- Water and wound cleansing solutions, e.g., wound irrigation solutions and antiseptics
- Basic product groups 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
 - Hydrofibers
 - Hydrocolloids
 - Hydropolymers
 - Superabsorbent dressing
- Specialised active agents
 - Local antiphlogistics
 - Local antibiotics
 - Agents supporting initiation of granulation tissue
- Specific wound situations
 - Pain in relation to dressing change
 - Control of wound odour (activated carbon)
 - Exudate management
 - Combating biofilm and infection
 - Bleeding

- Contact dermatitis

☞ Practical examples

UNIT 6: ALTERNATIVE TREATMENT OPTIONS FOR WOUNDS

Aim: This unit of study aims to increase the physician's understanding of the potential and limitations of new or alternative treatment methods.

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

- **K:** Evaluate the potential and limitations of new alternative treatments for wound management;
- **P:** Select the appropriate measures for therapeutic intervention in line with the defined treatment goals;
- **K:** Describe the different treatment methods and additives defined as new/alternative treatment options;
- **P:** Apply indications for use of alternative treatment options;
- **P:** Use alternative treatment options in practice;
- **A:** Understand the limitations and benefits of alternative treatment options, also taking into consideration the legal and ethical aspects.

Unit of study content

- Laser
- Hyperbaric O₂
- Ultrasound
- Physical measures
- Artificial skin
- Genetically modified wound healing factors
- Electrical stimulation
- Negative pressure wound therapy (NPWT)

☞ Practical examples

CLINICS

UNIT 7: PRESSURE ULCERS

Aim: This unit of study aims to increase the physician's understanding of the diagnosis, therapy, and prevention of pressure ulcers.

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) in theory and clinical practice;
- **K:** Explain the available therapeutic options for pressure ulcer treatment, depending on the ulcer category;
- **K/P:** Examine factors that predispose an individual to pressure damage;
- **P:** Define risk factors related to specific types of patients;
- **P:** Identify different skin damage diagnoses;
- **P/A:** Assess the needs of patients with respect to pressure relief and pressure distribution;
- **P/K:** Explain the factors that need to be discussed with patients and their carers in relation to pressure ulcer prevention and management;
- **A:** Identify who patients and carers may need to contact for further information and for further action.

Unit of study content

- Epidemiology of pressure ulcers
- Pathophysiology of pressure ulcers
- Risk factors
- Prevention strategies for pressure ulcers
- Classification of pressure damage
- Re-positioning strategies
- The adequate supportive position
- Prophylaxis
- Therapeutic principles
 - Conservative therapy
 - Debridement
 - Necrosectomy
 - Low-pressure therapy
 - Surgery
 - Dressings
- ☞ Practical examples

UNIT 8: DIABETIC FOOT SYNDROME

Aim: This unit of study aims to increase the physician's understanding of the diagnosis, therapy, and prevention of diabetic foot syndrome (DFS).

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;
- **P:** Categorise changes in the foot to aid selection of suitable assessment instruments;
- **P:** Apply investigative methods and analyse the results of the investigation;
- **P:** Select appropriate tools for reducing pressure on the foot;
- **P:** Differentiate between various types of wounds related to DFS;
- **K:** Outline the various possible surgical interventions;
- **P:** Apply the principles of interdisciplinary and multifactorial treatment depending on type, site, cause of ulcer and comorbidities;
- **A:** Recognise prevention of amputations as an important goal;
- **A:** Understand the opportunities and limitations related to podiatric treatment.

Unit of study content

- Epidemiology
 - Risk factors
 - Prevention
 - The causative chain - ulceration
 - The causative chain - amputation
 - Costs
- Pathophysiology
 - Neuropathy
 - Ischaemia
 - Osteoarthropathy
 - Infection
- Classification
- Basic and more advanced diagnostics
- Interdisciplinary therapy
- Institutions that care for patients with DFS and their communication points

- Principles of therapy
 - Debridement
 - Pressure relief
 - Management of microbiology
 - Wound-phase adapted treatment
 - Re-vascularisation
 - Sharp and surgical debridement
 - Amputation
- Treatment goals and outcome parameters
- Prevention
- Identification and education of high-risk patients
- Monitoring
- Podology management
- Supportive care and medical devices

☞ Practical examples

UNIT 9: LOWER LEG ULCERS

Aim: This unit of study aims to increase the physician's understanding of the important diabetological, phlebological, and angiological factors influencing the diagnosis and treatment of lower leg ulcers.

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

- **K:** Understand the most important aetiological causes, such as diabetological, phlebological, and angiological factors, for diagnosis and treatment of lower leg ulcers;
- **K:** Describe the typical development related to different clinical presentations;
- **K:** Understand the indications and available options for compression therapy;
- **K:** Investigate the regulations concerning use of compression systems, including supplementary materials;
- **K/P:** Evaluate the purpose of various types of compression and the potential complications;
- **K/P:** Investigate different manifestations of venous ulcers and differentiate between their genesis;
- **P:** Select the appropriate diagnostic method for a specific individual and justify the value of this method in the specific situation;
- **P:** Describe a wound and disease situation using appropriate classification systems;
- **P:** Apply different types of compression systems based on the specific patient situation;

- **A:** Understand the specific therapy of the underlying disease as a basic part of the treatment.

Unit of study content

- Classification
 - Diabetologic diagnostics
 - Angiological diagnostics
 - Varicosity
 - Peripheral arterial occlusion disease
 - Diabetic microangiopathy
 - Thrombosis
 - Thrombophlebitis
 - Venous oedema
 - Lymphatic oedema
 - Arteriosklerosis
 - Vasculitis
 - Skin cancer
 - Pyoderma gangraenosum
 - Mixed pathology
 - Rare causes of lower leg ulcers ulcer
 - The basics of compression therapy
 - Different techniques for compression and practical learning
 - Sclerosis of varicosity, mini stripping
 - Venostatic pharmaceuticals
 - Local therapeutic options
 - Surgery
 - Prophylaxis
- ☞ Practical examples

UNIT 10: HEALTH CARE DELIVERY AND HEALTH ECONOMICS

Aim: This unit of study aims to increase the physician's ability to explore the legal, financial, and ethical issues related to providing a wound care service, examine the principles of evidence-based practice, and understand the structural needs for treating wounds, including the basics of cost-effective care.

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

- **K:** Discuss the resources required to deliver an effective wound care service;
- **K:** Identify the requirements for building an effective wound care team;
- **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 in the health service;
- **K:** Outline the principles governing the conduct of clinical trials in practice;
- **K:** Explore the role of the wound care industry and the potential for collaboration between healthcare providers and manufacturers;
- **K:** Explore the ethical issues surrounding the management of individuals with wounds;
- **K:** Discuss the importance of evidence-based practice;
- **K:** Evaluate the types of 'evidence' that influence clinical practice;
- **K:** Identify current national and international guidelines for the management of individuals with wounds;
- **K:** Discuss the role of the patient and his/her carers in their management plan;
- **K:** Illustrate the importance of managing the transition of a patient between different care settings.
- **P:** Identify legal requirements for specific cases.

Unit of study content

- Multidisciplinary teamwork/the wound team
 - Health economics, cost effectiveness, and budgeting
 - Laws governing the provision of healthcare
 - Contact with the patient during treatment
 - Reimbursement and regulation of healthcare
 - Undertaking clinical trials/ICHGCP guidelines
 - The role of the wound care industry
 - Ethics
 - Evidence-based practice
 - Wound management guidelines, standards, and algorithms (local, national, and international)
 - Involving patients and their carers in decision making
 - Transition management (e.g., between hospital and home care)
 - Quality improvement strategies
 - Psychosocial aspects of wound healing, for example the effects of wounds on patients, the experience of living with a wound, effects on body image, health-related beliefs
- ☞ Practical examples

UNIT 11: DOCUMENTATION

Aim: This unit of study aims to increase the physician's ability to understand and meet the specific documentation requirements related to wound management.

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

- **K:** Describe the requirements for documentation related to wound management;
- **A:** Review the documentation as an important administrative task;
- **P:** Document the wound situation in a particular case according to the specifications;
- **K:** Evaluate different documentation systems for their usefulness and practicality.
- **K:** Understand the need for wound related information in referral letter to other specialities.
- **K:** Engage in wound related communication with other institutions with need for documentation, e.g. insurance companies and legal courts (witness statements).

Unit of study content

- The relevant minimal data set
- Parameters of written documentation
- Non-digital measurement of the wound
- Photography
- Computer-assisted systems
- Exchange of documentation
- ☞ Practical examples

ESTIMATED HOURS & 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 MINIMUM WORKLOAD ¹ PER UNIT OF STUDY	
	Lectures (Contact Hours)	Practical Work ² (Patient Cases n=100)
UNIT 1 Wounds and Wound Healing	6	4
UNIT 2 Nutrition and Wound Healing	6	2
UNIT 3a Microbiology and Wounds	6	4
UNIT 3b Antimicrobial Agents, Hygiene and Wounds	6	10
UNIT 4 Debridement and Wounds	6	10
UNIT 5 Moist Wound Healing	4	10
UNIT 6 Alternative Treatment Options for Wounds	6	10
UNIT 7 Pressure Ulcers	10	10
UNIT 8 Diabetic Foot Syndrome	10	10
UNIT 9 Lower leg ulcers	10	27
UNIT 10 Health care delivery and health economics	6	Evidenced from a range of patient cases from 3 different wound healing units ³ (or clinical areas)
UNIT 11 Documentation	4	3
TOTAL	80	100

Table content specifications:

¹ 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.

² A physician is expected to work in a wound healing unit or similar service for a minimum of 3 months to gain the relevant level of experience.

³ Wound Healing Unit / Institution – this should be a recognised healthcare facility that is responsible for managing patients with wounds. This may include healthcare services in primary and secondary care

Suggestions for defining the learning methods for completion of the curriculum can be found in appendix 1. These are suggested for use in those cases where locally defined learning methods are not pre defining the methods, or as a supplement to locally defined methods.

ASSESSMENT METHODS AND COMPLETION

Universities have different methods to assess the physicians learning process. For the purpose of defining appropriate assessment methods for this curriculum, we do, however, recommend use of the OSCE clinical examination as this method has been widely used in clinical courses at advanced level. Objective Structured Clinical Examination (OSCEs) is a form of performance-based testing used to measure candidates' clinical competence. During an OSCE, candidates are observed and evaluated as they go through a series of stations in which they interview, examine and treat standardized patients (SP) who present with some type of medical problem. OSCE was first described by Harden et al from Dundee¹ (1975). It was first reported from Dundee and Glasgow². It was firstly adopted in North America in a widespread manner, then widely adopted in the UK in the 1990s. OSCE is now considered the primary method for clinical skills assessment in medical schools and licensure bodies across USA, Canada, UK, Australia, New Zealand and other countries. In addition, Objective Structured Clinical Examination (OSCEs) has proved to be so effective that it is now being adopted in disciplines other than medicine, like dentistry, nursing³, midwifery, pharmacy and event engineering and law.

However, for the service of those users of this curriculum who would like some input for defining the assessment methods, we provide some suggestions for assessing learning outcomes in appendix 2.

¹ Harden R M, Stevenson M, Downie W W, Wilson G M, Assessment of clinical competence using objective structured examination. *BMJ* 1975;1:447

² Harden R M, Gleeson F A, Assessment of Clinical Competence Using an Objective Structured Clinical Examination (OSCE), *Medical Education*, Volume 13, Issue 1, Pages 39–54, January 1979

³ Ross, M., Carroll, G., Knight, J., Chamberlain, M., Fothergill-Bourbonnais, F., and Linton, J. (1988) Using the OSCE to measure clinical skills performance in nursing. *Journal of Advanced Nursing*, 13, 45-56).