

## **IASP Curriculum Outline on Pain for Medicine**

Task Force Members: Thomas Graven-Nielsen (Chair), Rolf-Detlef Treede, Adriana Cadavid, James Rathmell

### **Outline Summary**

Introduction

Principles

Objectives

Curriculum Content Outline

I. Multidimensional Nature of Pain

II. Pain Assessment and Measurement

III. Management of Pain

IV. Clinical Conditions

References

### **Introduction**

Medical school pain curriculum needs to be progressively improved according to the practice which evolves continuously. Pain is important for medical doctors (e.g. leading complaint in most doctor-patient contacts, quality of life issues, differential diagnosis is made by doctor) and must be a serious component of the medical curricula. Many medical schools teach very little about pain at either the preclinical or clinical levels and information is poorly integrated. Changing medical undergraduate curricula is never an easy task. It is one which needs to be catalysed and facilitated in a variety of ways.

The Pain Curriculum Outline will become available to a wide audience in the hope that it might stimulate comments, criticisms and suggestions. The committee hopes that those involved in Medical School Curriculum planning will use the Outline to draw the attention of their colleagues to the areas which ought to be covered if medical graduates are to be adequately prepared for the management of pain. Obviously there are as many ways of covering the topics in the Outline as there are medical schools. The proposed outline is meant to provide useful guidelines. A general suggestion on how these might be put into practice is to cover many of the items below as part of teaching basic, clinical or social sciences early in the curriculum followed by a comprehensive pain medicine course late in the curriculum. As an example a curriculum in Germany (15 hours, 5th year) can be downloaded from the internet (see end of page).

### **Principles**

The following principles guide the pain curriculum for the entry level physician:

1. Pain is a multidimensional requiring comprehensive and ongoing assessment and effective management.
2. Physicians play an essential role in the prevention, diagnosis and management of acute and persistent pain.

### **Objectives**

Physicians upon completing this entry level pain curriculum will be able to:

1. Recognize pain medicine as a necessary field in clinical practice for acute and persistent (chronic) pain conditions
2. Understand basic sciences of pain processing components such as anatomy, physiology, neurobiology and pharmacology
3. Identify clinical presentation of acute and persistent pain syndromes or conditions
4. Recognize the multidimensional aspects of the pain experience and its related management
5. Understand analgesic options appropriate for individual patients according to medical condition, drug availability, risk-benefit balance, cost-effectiveness, culture, mental status and evidence of efficacy
6. Learn effective interaction with multi-professional teams involved in practicing pain medicine.
7. Practice pain medicine according to ethical principles

## Curriculum Content Outline

### I. Multidimensional Nature of Pain

#### A. Definition of pain

1. Biological significance of pain (survival value)
2. Relationship between acute and chronic pain
3. Distinction between nociceptive and neuropathic pain
4. Pain as a public health problem
5. Epidemiology: Societal consequences

#### B. Ethical issues

1. The right to receive treatment for pain
2. Pain disability and litigation
3. Pain in children
4. Pain and opiate dependence
5. Pain research in humans and animals

#### C. Basic sciences

1. Neuroanatomy and Neurophysiology of Pain
  - i. Peripheral receptors, afferent fibers, transduction and transformation, peripheral sensitization
  - ii. spinal terminations and spinal processing of nociceptive information, spinal reflexes, ascending tracts, transmitters (peptides and amino acids),
  - iii. brainstem mechanisms of pain (autonomic reflexes, ascending reticular activating system)
  - iv. thalamic nuclei, nociceptive cortical network, cortical reorganization
  - v. descending control of nociceptive information and pain modulation. Central sensitization
  - vi. Genetics in relation to pain mechanisms
2. Pharmacology of Pain

- i. Basic pharmacology of local anesthetics,
  - ii. Basic pharmacology of nonsteroidal anti-inflammatory drugs,
  - iii. Basic pharmacology of opioids,
  - iv. Basic pharmacology of other relevant drugs (e.g. anticonvulsants, antidepressants).
3. Psychology of Pain
- i. Affective, cognitive, behavioral, and developmental aspects. Pain attribution. Self-esteem, self-efficacy, and perceived self-control
  - ii. Interpersonal issues, sick role, illness behavior (normal and abnormal), the influence of political, governmental, and social welfare programs, the role of the family.
  - iii. Cultural differences in pain meanings and treatment approaches.
  - iv. Illness behaviors associated with pain (denial and amplification)
  - v. Pain as a coded message of psychosocial distress

## **II. Pain Assessment and Measurement**

A. The validity, reliability, sensitivity, specificity, and clinical utility of methods for:

- 1. The measurement of pain, disability, associated distress and suffering
- 2. Quantitative sensory testing in relation to specific mechanisms
- 3. The evaluation of analgesic therapy (Choice of outcome measures)
- 4. Assessment of pain relief

## **III. Management of Pain**

A. General principles

- 1. The measurement, quantification and recording of pain
- 2. The multiperspective approach (multidisciplinary pain clinics)
- 3. The clinician-patient relationship

B. Clinical pharmacology

- 1. Nonsteroidal anti-inflammatory drugs
- 2. Systemic and spinal opioids, endorphins
- 3. Local anesthetics
- 4. Other drugs active against neuropathic pain (e.g. anticonvulsants, antidepressants)

C. Neurostimulation techniques

- 1. Transcutaneous nerve stimulation
- 2. Brain and spinal cord stimulation
- 3. Acupuncture

D. Nerve blocks (image guided)

- 1. Local anesthetics
- 2. Neurolytic solutions

#### E. Surgical techniques

1. Nerve decompression
2. Neurosurgical techniques
3. Orthopedic techniques

#### F. Psychotherapeutic and behavioral approaches

1. Individual, family, and group psychotherapy
2. Cognitive-behavioral therapy
3. Relaxation techniques (biofeedback, etc.)
4. Hypnotherapy, operant approach, stress management

#### G. Physical therapy

1. Exercise, massage, heat, hydrotherapy, etc.

### **IV. Clinical Conditions**

#### A. Specific pain issues related with:

1. Children and infants (signs of pain, evaluation and management, physiology, acute and chronic pain)
2. Elderly
3. Developmentally challenged
4. Pregnancy, childbirth, and breastfeeding
5. The opioid tolerant patient
6. Substance abuse disorders

#### B. Etiology, diagnosis, multidisciplinary management, economic impact, medico-legal and compensation issues within:

1. Emergency Service Pain
2. Postoperative Pain
3. Neuropathic Pain
4. Musculoskeletal pain
5. Cancer Pain
6. Headache
7. Visceral pain
8. Dysfunctional pain syndromes

### **References**

German pain curriculum for medicine (15 hours, 5th year)