O1- MODEL PALLIATIVE CARE UNDERGRADUATE MEDICAL CURRICULUM

Translating International Recommendations into Undergraduate Medical Palliative Care Curriculum - EDUPALL

EDUPALL is an Erasmus+ funded project to produce a complex European Palliative Care programme for undergraduate medical students based on the European Association of Palliative Care (EAPC) recommendations for undergraduate education.

http://www.professionalPalliativehub.com/education/edupall

Acknowledgements. This report and the Curriculum Matrix for Undergraduate Medical Education in Palliative Care is a product of the EDUPALL project:

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We would like to thank the external peer reviewers who provided comment and guidance on the Curriculum Matrix: Dr. med. Johann Baumgartner, Hospiz Osterreich – Austria; Dr. med. Ondřej Slama, Klinika komplexní onkologické péče, Brno - Czeck Rep; Dr. Mette Neergaard, Aarhus University – Danemark; Dr. Juho Lehto, Tampere University Hospital (TAUH) – Finland; Pr Marilène FILBET, Centre de soins palliatifs pav 1K, Centre hospitalier Lyon sud, Hospices Civils de Lyon – France; Prof. Dr. Kordzaia Dimitri, Tbilisi State University – Georgia; Prof. Dr. med. Ostgathe Christoph, Universitätsklinikum Erlangen – Germany; Dr. Aliki Tzerkezoglou, Palliative Care Unit Galilee – Greece; Assoc. Prof. Dr. Agnes Csikos, University of Pecs Medical School – Hungary; Dr. Port Sales Josep, Catalan Institute of Oncology in Barcelona – Spain; Assoc. Prof. Jaime Boceta Osuna, University of Seville – Spain; Prof. Dr. med. Steffen Eychmüller, University Cancer Center InselSpital – Switzerland; Prof. John E Ellershaw, University of Liverpool – UK.

Date of Publication: 22nd of May 2019

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1. Introduction – Palliative Care: An International Challenge.

Palliative Care is a holistic approach to patient care that aims to improve the quality of life for patients, and their families, living with an incurable life-threatening chronic condition [1]. Modern Palliative Care developed from the pioneering work of Dame Cicely Saunders and the Hospice Movement, and is now recognised as a model of care that is applicable across a range of chronic life-limiting conditions [2]. This position has been strengthened internationally by a recent resolution from the World Health Assembly (WHA) that recommends equitable access to Palliative Care regardless of a patient's chronic illness [3].

Access to Palliative Care is increasingly recognised as an International Human Right [4]. However, the ageing population and an increasing prevalence of patients with multiple chronic comorbidities presents a challenge to existing healthcare systems [5, 6]. The Lancet Commission report "Alleviating the access abyss in Palliative Care and pain relief—an imperative of universal health coverage" estimated 25.5 million of the deaths in 2015 involved serious health-related suffering, equating to 6 billion hours of significant distress [7].

According to the World Health Organisation (WHO) "Global Atlas of Palliative Care at the End of Life", the main barrier to increased access to Palliative Care is a lack of trained healthcare professionals [8]. As a result, a key challenge for modern healthcare systems is how to integrate Palliative Care within current training, to ensure there is sufficient resource to meet the needs as outlined in the Lancet Commission report. To address this challenge, the WHO proposed that:

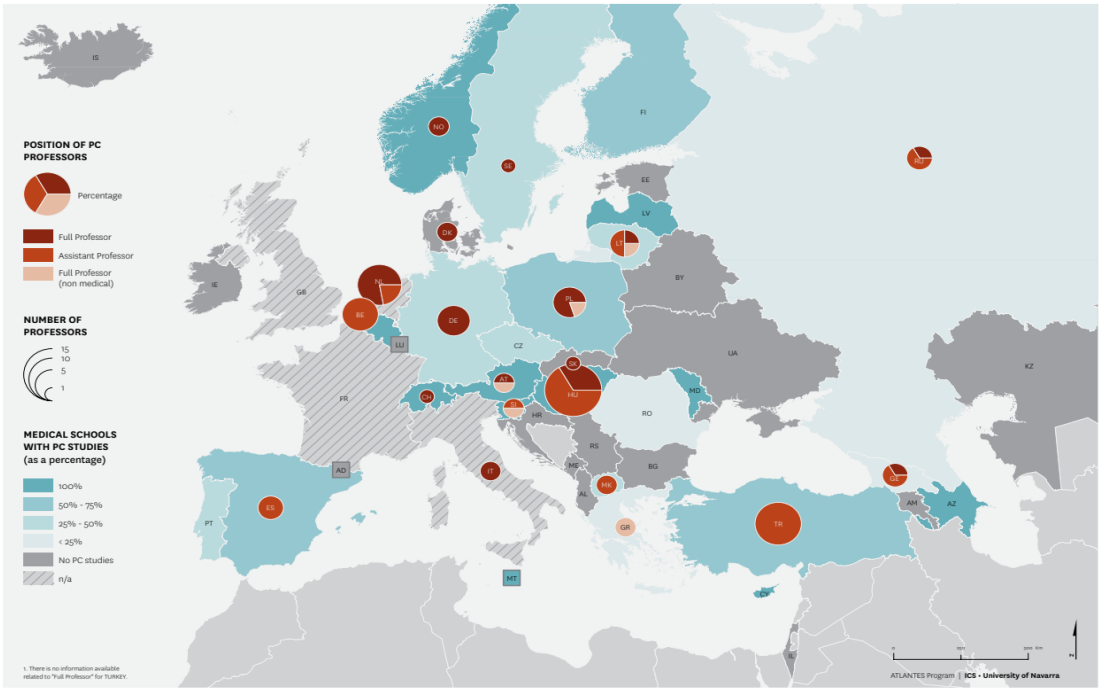
> "…*basic training and continuing education on Palliative Care should be integrated as a routine element of all undergraduate medical and nursing professional education, and as part of in-service training of caregivers at the primary care level..."* [9]

Accordingly, it is imperative that every student doctor understands, and is both competent and confident in applying, the principles of Palliative Care as changing global demographics and patterns of chronic illness mean that every future clinician will be required to care for patients with Palliative Care needs. However, the provision and standard of training in Palliative Care for medical undergraduates is variable [10]. The EAPC Atlas identified that in only six of 43 European countries surveyed, training in Palliative Care was mandatory for medical students [11].

2. Undergraduate Medical Training in Palliative Care

Within undergraduate medical education across Europe, there is a notable lack of parity in the opportunities for medical students to learn how to practice Palliative Care. The 2013 Atlas of Palliative Care identified that access to any type of formal training for medical students was not available in 32% of the countries surveyed (Figure 1) [10].

Figure 1. EAPC Atlas of Palliative Care – Undergraduate Education.



Initiatives have developed across Europe to redress this imbalance and increase the access to training in Palliative Care [12-23]. For example, in a 2-year (2013-15) systematically structured review of studies in undergraduate education in Palliative Care, Centeno et al., note 55 studies published [24]. The identified studies covered Europe, Asia, Australasia and North America, with most studies qualitative in nature and focussed on participants' own attitudes and confidences towards practice, rather than any direct effects on patient care.

An earlier review (2007-13) by DeCoste-Lopez et al., reported on 48 curriculum interventions in Palliative Care training, across 12 countries [25]. As with Centeno's review, DeCoste-Lopez notes great variability in the amount of, and exposure to, Palliative Care training. A lack of detail in the reporting of educational interventions limited both full analysis and understanding of the teaching provided, making links to the impact of training on patient care difficult to construe.

Subsequent to Centeno's and DeCoste-Lopez's reviews, there remain consistent efforts to examine and address current gaps in the provision of training. For example, Lehto et al.,[26] reviewed the undergraduate medical curriculum at the University in Tampere in Finland,

examining for teaching that specifically addressed the items within the 'Recommendations of the European Association for Palliative Care (EAPC) for the Development of Undergraduate Curricula in Palliative Medicine at European Medical Schools'[27]. Lehto found 53.5 hours of matched content within the existing curriculum but noted a significantly improved performance in a progress test from students that undertook an additional 53-hour optional module on Palliative Care. de Bruin and colleagues conducted a review of the national curriculum guidance (Dutch National Blueprint) within each of the eight Dutch Medical Schools, to examine the extent of Palliative and end of life care currently being taught [28]. Using five domains considered essential, and 22 subdomains (developed from the EPEC Project [29, 30]), results highlighted that the National Blueprint did not cover all essential domains and consequently none of the eight medical schools provided a full curriculum on Palliative and end of life care.

Several European countries have mandated compulsory training in Palliative Care for medical students. For example, Ilse et al., report on the effects of the 2009 legislation in Germany that resulted in undergraduate education in Palliative Care being compulsory across all medical schools [15]. In a longitudinal assessment, Ilse notes many innovations in teaching practice, but also notes significant heterogeneity in the programmes delivered.

The UK General Medical Council recommended that "Care of the Dying" become part of the core curricula in its guidance documents 'Tomorrow's Doctors'[31] and latterly 'Outcomes for Graduates' [32]. Following this recommendation, Walker and colleagues examined the provision of undergraduate training in Palliative Care within the UK Medical Schools, noting an increase in mean teaching time (2000: 6–100 h, mean=20 h; 2013: 7–98 h, mean=36 h) and assessment (2000: 6/24, 25%; 2013: 25/30, 83%) [33]. Although improvements were recorded, Walker notes that in some medical schools, students could still progress through training to qualification without formally seeing a patient with palliative care needs.

In Switzerland, Eychmüller similarly noted a mean 15 hour increase in mandatory training in Palliative Care across the five medical schools, when compared to data from 2007 [34]. Noted variability across the five schools (only one school had a specific clinical rotation in Palliative Care) has led to the development of a nationally defined set of core learning objectives within the Swiss Catalogue of Learning Objectives.

2.1 Undergraduate Medical Training in Palliative Care in EDUPALL Countries

Romania: In Romania, from which the EDUPALL project is led, Palliative Care was established in 1992 and recognised as medical subspecialty in 2000 [35]. At undergraduate level in 2018, 11 of the 12 Medical Schools have academic staff trained in Palliative Care, with two having chairs. Since 2017, regulation concerning accreditation requires that all medical and nursing faculties in Romania have Palliative Care included as a compulsory self-standing discipline. Accordingly, two of the 12 medical universities in Romania have already included compulsory Palliative Care training for medical (and nursing) students, with both theoretical classes and bedside training. Three other universities have included Palliative Care as optional courses with credit points. The Romanian National Strategy for Sustainable Development foresees that by 2020, 60% of those in need of palliative care will be cared for appropriately. To achieve this ambitious target, medical students need training from a basic level through core training and Continuing Medical Education courses, through to post-graduate subspecialty courses for Specialist Palliative Care Services.

Ireland*:* In Ireland, the Palliative Care Competence Framework [36] was developed in part to inform undergraduate and postgraduate academic curricula, and detail core competences in Palliative Care for each health and social care discipline; including those newly graduating as medical doctors. Additionally, the 8th edition of the Irish Medical Council Guide to Professional Conduct and Ethics of 2016 states that: "When patients are nearing the end of life, it is a doctor's responsibility to make sure they are comfortable, suffer as little as possible and die with dignity. They should be treated with kindness and compassion." Whilst Palliative Care education is an integral component of all undergraduate medical teaching in Ireland, exposure to specialist Palliative Care services and training varies across the academic providers.

Germany*:* In Germany, all 38 Medical Schools (including private medical schools) have academic staff in Palliative Care, with 10 having chairs. Since 2009, regulation has defined that Palliative Care is to be included as a compulsory discipline within undergraduate training, with a recommendation of 20 (ideally 40) hours. Accordingly, all medical schools in Germany have already included compulsory Palliative Care training for medical students. However, teaching is largely in theoretical classes, with only a low percentage with bedside training.

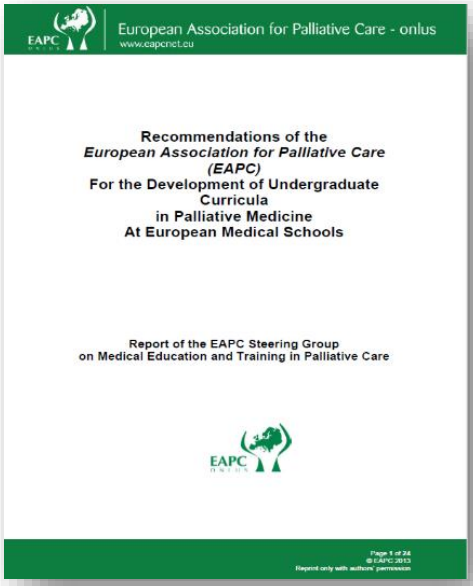
2.2 The Importance of Undergraduate Medical Training in Palliative Care.

The lack of training in Palliative Care is a critical issue, as newly qualified doctors are likely to be entering clinical practice with variable skill sets and may be unprepared to meet the Palliative Care needs for an increasing number of patients and their families. In a study of the patient population in acute hospital settings, Clark et al., identified that 1 in 3 patients would die within the calendar year, and 1 in 10 patients would die on first admission [37]. It is therefore no surprise to learn that evidence from the UK also identifies that with their first year of practice, a newly qualified doctor will care for 120 patients in the last three months of life, and 40 patients in their last days and hours of life [38].

The provision of training in Palliative Care is crucial, not only for the patients and families with Palliative Care needs, but also for the professional development of doctors. In an international scoping review, Noguera et al., report that training in Palliative Care addresses issues central to the professional curriculum, with students identifying that training in palliative care helps them to become better doctors [39].

The White Paper for Global Palliative Care Advocacy [40] echo's the proposal EB134.R7 from the WHO on the need for mandatory education, and identifies that the 'EAPC Recommendations for the Development of Undergraduate Curricula in Palliative Medicine' [27] should be adopted and implemented by Academic Institutions. With variable provision and a lack of standardised Palliative Care education across Europe, many countries would welcome a model curriculum and structured guidance on developing undergraduate training programmes.

3. The EAPC Recommendations on Undergraduate Medical Training.



The EAPC considers that "every undergraduate medical student will need to learn about Palliative Care" and in 2007, developed and published guidelines for training in Palliative Care at undergraduate level - "Recommendations for the Development of Undergraduate Curricula in Palliative Medicine at European Medical Schools" [27]. The guidelines were revised and republished in 2013 following a modified Delphi process that engaged experts from across Europe to ensure the that updated recommendations were meaningful, relevant and applicable across the continent.[41]

The EAPC Recommendations provide a framework for those wishing to develop an undergraduate curriculum and outline general principles in curriculum planning and implementation that should be engaged. Key concepts in knowledge and comprehension are outlined across six domains of learning:

1. Basics of Palliative Care;
2. Pain and Symptom Management;
3. Psychosocial and Spiritual Aspects;
4. Ethical and Legal Issues;
5. Communication;
6. Teamwork and Self-Reflection.

Although key concepts are presented, the recommendations are not structured as formal Learning Outcomes and/or associated Learning Objectives. However, it is emphasised within the guidance that learning experiences and educational activities to address 'locally developed Learning Objectives' should foster appropriate outcomes in attitude, knowledge and skills development.

4. The EDUPALL project

Funded through the Erasmus+ "Cooperation for innovation and the exchange of good practices" action, the EDUPALL project aims to produce a complete programme for undergraduate medical student education in Palliative Care. Based on the EAPC Recommendations for the development of undergraduate curricula, and led by Associate Professor Dr Daniella Mosoiu, the objectives of the EDUPALL project are to:

1. Produce a model undergraduate Palliative Care curriculum, based on the EAPC recommendations;
    a. the curriculum will available in Romanian, English and German - and credited with 3 ECTS points;
2. Prepare training material in Romanian and English, including an online course;
3. Produce a curriculum for trainers to include: interactive teaching methods; use of technology; mentoring of students; and innovative assessment methods;
4. Prepare trainers to deliver theoretical and practical training;
5. Pilot the curriculum in both Romanian Universities and Irish Universities;
6. Monitor and research impact of the new undergraduate program and publish results in medical literature.

The first task of the EDUPALL collaborative is to produce a model undergraduate curriculum, using the EAPC Recommendations, with participation and collaboration from all the EDUPALL partners and associated partners: Transilvania University, Hospice Casa Sperantei Brasov, University of Medicine and Pharmacy of Iasi, University of Medicine and Pharmacy of Targu Mures, University of Medicine and Pharmacy of Timisoara, University of Medicine and Pharmacy "Carol Davila" Bucharest, Romania, University Ovidius, Constanta, Romania; RWTH Aachen University Germany; The All Ireland Institute, Ireland; Paracelsus Medical Private University in Salzburg, Austria; The Atlantes research programme, University of Navarra, Spain; University of Liverpool, England; and the EAPC.

4.1 The EDUPALL Curriculum

The aim of the EDUPALL project is to develop a universally applicable curriculum that can be adopted and implemented (and adapted) where required. As part of a "complete" curriculum, exemplar lesson plans employing blended learning, e-learning and "bed-side" teaching will be developed to address the Learning Outcomes and Objectives. The purpose of the detail in the developed curriculum is to support a rapid transition and implementation of undergraduate training in Palliative Care within existing undergraduate medical curricula.

5. Developing the EDUPALL Curriculum

The structural outline for the EDUPALL curriculum was developed at the initial EDUPALL meeting in Brasov, Jan 2018. The curriculum is structured to merit 3 European Credit Transfer System (ECTS) points, with 72 hours of training, organised into: theoretical training (14 hours); bedside training (28 hours); online training (30 hours) and self-directed study. The allocation of time within the curriculum for each of the six educational domains, as outlined in the EAPC Recommendations, is structured thus:

1. Basics of Palliative Care – 5%;
2. Pain (25%) and Symptom Management (25%) – 50%;
3. Psychosocial and Spiritual Aspects – 20%;
4. Ethical and Legal Issues – 5%;
5. Communication – 15%;
6. Teamwork and Self-Reflection – 5%.

5.1 Updating the 2013 EAPC Recommendations for the Development of Undergraduate Curricula.

Members of EDUPALL (Clinicians, Academics and Researchers) were divided into four supra themed groups (Table 1). Each group was structured to maximise international and professional diversity from within the EDUPALL team.

Table 1 – EDUPALL Themed Groups	
Group 1	Basics of Palliative Care 5% + Psychosocial and Spiritual Aspects 20%;
Group 2	Pain Assessment and Management 25%
Group 3	Symptom Assessment and Management 25%
Group 4	Ethical and Legal Issues 5% + Communication 15% + Teamwork and Self-Reflection 5%.

Each group reviewed the relevant 2013 EAPC Recommendations particular to their allotted supra theme for relevance, purpose and potential omissions. Following review, the group returned suggested revisions and/or additions as necessary. Initial revisions and additions of the EAPC Recommendations were centrally collated and then discussed across the whole EDUPALL team for either acceptance or rejection. This produced an updated version of the 2013 EAPC Recommendations (Table 2), with the specific revisions outlined in Appendix 1.

Table 2: EDUPALL Consensus Revision of the EAPC Recommendations for the Development of Undergraduate Curricula in Palliative Medicine.

Syllabus

A suggestion for the split for the percentages of the topics within the syllabus is presented below:

1. Basics of Palliative Care	**5%**
2. Pain and symptom management	**50%**
3. Psychosocial and spiritual aspects	**20%**
4. Ethical and legal issues	**5%**
5. Communication	**15%**
6. Teamwork and self-reflection	**5%**

The proposed curriculum is based upon the minimum knowledge and skills which a medical student should obtain during his/her undergraduate education. The content list below must be translated into learning objectives and the educational strategy (learning method) must be defined (see (E) General Principles of Curriculum Planning).

The teaching staff for the items below can and will vary, including faculty from different professional backgrounds other than medicine.

1. Basics of Palliative Care: 5%

Knowledge	**Awareness of**
• International development of the idea of hospice and Palliative Care • Definition of Palliative Care	The complexity of the end-of-life The physician's task in end of life care The multi-professional and interdisciplinary approach of Palliative Care The necessity of an early integration of Palliative Care in disease progression
• Forms of organisation: ➢ outpatient ➢ inpatient ➢ consulting	The necessity of different forms of organisation The necessity of communication between services

2. Pain and Symptom Management: 50%

a) Basic principles of symptom management

Content	Awareness of
• Disease modifying therapy • Palliative therapy • Palliative medicine	The chance of an increase of quality of life by offering Palliative Care early

• Interdisciplinary options
  ➢ Surgery
  ➢ Radiotherapy
  Pharmacological
  ➢ Non-pharmacological
 	
• Palliative sedation
  ➢ Indications
  ➢ Procedure
  ➢ Care of the relatives
	The necessity of interdisciplinary and multi-professional treatment
	
	Balancing diagnostics and treatment with the stage of disease
	
	Palliative sedation for intractable suffering
	The conceptual difference between Palliative sedation and euthanasia

• Planning and evaluation of treatment • Symptom assessment (goals and tools) • Continuous and on-demand medication • Prevention and rehabilitation • Documentation	The importance of the individual and prospective treatment and care The importance to define goals

b) Pain management:

Knowledge	Comprehension of

• Definition and concepts of pain
• Anatomy, pathophysiology
• Mechanisms of nociceptive pain (bone pain, soft tissue pain, visceral pain)
• Mechanisms of neuropathic pain
• Recognition of chronic pain features
• The concept of "total pain"
• Principles of pharmacological treatment
  ➢ Importance of achieving 'steady state'
  ➢ Using the simplest available route of administration
  ➢ Role of titration
  ➢ Necessity to prescribe rescue medication
  ➢ The role of equianalgesic doses
  ➢ The role of opioid rotation
• Pharmacokinetics and -dynamics of opioids, non-opioids & adjuvant analgesics
• Routes of drug administration and their indications, alternative routes when oral is not possible.
• Non-pharmacological pain management:
  ➢ Oncological interventions (chemotherapy, radiotherapy)
  ➢ Interventional procedures (anaesthetic or neurosurgical)
	The multidimensional approach of pain management
	
	The complexity of pain management in end of life care
	
	The fact that there is more to pain relief than drugs.
	
	Rumours and untruths. Address and break-down the myth that opioid analgesics are addictive and that if initiated too early can hasten death.

➢ Nursing interventions ➢ Psychotherapy and counselling ➢ Physiotherapy ➢ Alternative therapy • Organisational and legal problems: ➢ Special prescription forms ➢ Driving ability ➢ Travelling	

(c) Symptom management:

Knowledge	**Comprehension for**
• Gastrointestinal symptoms ➢ Constipation and diarrhoea o Anatomy and physiology of normal defaecation and bowel continence. o Mechanisms of constipation in end-of-life care (drugs, particularly opioids, altered diet) o Weakness o Ileus ➢ Nausea and vomiting o Pathophysiology of nausea and vomiting: sites and receptors o Pharmacology of anti-emetics: sites of drug action o The role of the route of drug administration ➢ Bowel obstruction o Treatment options for partial or complete bowel obstruction: surgical and non-surgical; pharmacological and non-pharmacological • Pulmonary symptoms ➢ Dyspnoea o Pathophysiology of respiratory symptoms o Relevant pharmacology (opioids, anxiolytics, steroids) o Non-Pharmacological approaches o Principles and mechanisms of action of oxygen therapy o How to deal with "death rattle" o Assessment of patients and/or families concerns re pulmonary symptoms ➢ Pleural Effusion o Causes, mechanisms and management of pleural effusion ➢ Cough o Causes, mechanisms and management of cough: pharmacological and non-pharmacological	The physical, psychological, social and spiritual aspects of symptom management in Palliative Care. **Recognitio**n: Identification of key signs and symptoms **Assessment/Diagnosi**s: Approaches to assessment (including validated assessment tools and scales where relevant) **Effect**s: Potential effects of the Symptom on: the patient; their family - e.g. meanings ascribed to symptoms; fears associated with each symptom **Management:** Approaches to providing symptom relief, including pharmacological and non-pharmacological approaches

• Neuropsychiatric symptoms ➢ Causes, assessment and management of: o Delirium o Insomnia o Depression and other mood disorders o Anxiety and fear o Hallucinations o Coma • Hydration ➢ Causes, assessment and management of: o Oedema o Ascites o Types and effects of dehydration o Patients and families perspectives and understanding • Anorexia, Cachexia and Fatigue ➢ Causes, assessment and management of: o Loss of appetite o Fatigue o Weakness, lethargy o Nutrition o Patients and Families perspectives and understanding • Oral Care ➢ Causes, assessment and management of: o Mucositis o Sore mouth o Swallowing problems • Dermatologic symptoms ➢ Causes, assessment and management of o Ulcerating tumours o Wound breakdown / bedsores o Lymphoedema o Itching • Emergencies in Palliative Care ➢ Causes, assessment and management of o Hypercalcemia o Spinal cord compression o Superior vena cava obstruction o Major haemorrhage	

• Care of the Dying ➢ Recognising the terminal phase ➢ Discussions/awareness of patients/family ➢ Care Plans ➢ Anticipatory prescribing for pain; respiratory tract secretions; nausea/vomiting; dyspnoea ➢ Hydration and nutrition ➢ Terminal anxiety/agitation and Sedation ➢ Review of all medications/clinical interventions in best interest of the individual patient ➢ Care after death	

3. Psychosocial and spiritual Aspects: 20%

Knowledge	**Comprehension for**
• Psychological reactions to chronic illness, grief and loss • Impact on patient and family of loss of independence, role, appearance, sexuality and perceived self-worth • Family dynamics • Ethnic, social and religious differences • How to help patients and families to deal with practical, financial and legal issues where appropriate. To arrange for social work and legal briefing to assist with will making or revision and compensation claims, which sometimes arise as matters of urgency close to the end of life • Facilitation of work leave and travel arrangements for relatives and friends to come to visit a dying person from within the country and overseas	The patient's autonomy The meaning of truth The patient's individuality The patient's vulnerable self-respect The meaning of vitality and sexuality Cherishing the patient's and relatives' feelings Cherishing the patient's and relatives' needs The complexity of the patient's social circumstances The idea of a "Unit of Care" The important role of the family in terms of the patient's quality of life The specific needs of children
• Coping strategies	The difficulties you may encounter when dealing with severe illness and closing death The importance and meaning of quality of life in Palliative Care
• Grief and bereavement as a process of each concerned person • Anticipatory mourning • Risk factors for difficult mourning	Identification of helpful and not helpful strategies when working with the patient's and relatives' mourning, including children: ➢ at the beginning of the disease ➢ during disease ➢ when patient is dying ➢ after patient's death

• Spirituality ➢ Hope ➢ Review of one's life ➢ Belief ➢ Meaning of life ➢ Sense of coherence	The differences between spirituality and religion One's own spirituality The patient's spirituality

4. Ethical and Legal Issues: 5%

Knowledge	Comprehension for
• Discussion of decision-making process in Palliative Care particularly withdrawal or withholding of a treatment • Negotiating and placing 'Do-not-attempt cardio-pulmonary resuscitation orders (DNACPR or DNR) • Exploration of advance care planning • Palliative Care as a human right: justice and access	Ethical aspects in medical and shared decision-making
• Distinction between Palliative Care and euthanasia: double affect • Ethical and legal differentiation in the national and international context ➢ Euthanasia ➢ Physician assisted suicide	The reflection about the physician's role in treatment of Palliative Care patients

5. Communication: 15%

Knowledge	Comprehension for
• Models of effective communication • Differentiation: ➢ Meeting patient's communication styles and level ➢ Active listening ➢ Empathetic communication ➢ Signposting to reliable sources of information • Specific communication issues ➢ Patient's personal information ➢ Prognosis ➢ Decision-making ➢ Conflict and conflict resolution ➢ Talking with relatives ➢ Dealing with collusion (option)	The perception of the patient's attitude towards their disease Knowledge of strengths and weaknesses in communication skills

6. Teamwork and Self-reflection: 5%

Knowledge	Comprehension for
• How to work in a team • Roles and responsibilities of Palliative Care Multi-Disciplinary Team (MDT) and effective delegation	Team debriefing
• Respect and value in Palliative Care team	

• Self-care
  • Burn-out – prevention and avoidance
  • Mindfulness
  • Perceptions of doctor's role (saviour vs healer; avoidance and prophylaxis)
	Reflection of managing burdens and personnel concern
	Supervision provision
	The reflection of one's own ethical attitude
	The reflection of one's own attitude towards death and dying

Perhaps the most notable updates to the existing EAPC Recommendations was the need for additional objectives within the Pain and Symptom Management theme, and within this the development of a specific set of knowledge goals pertaining to Care of the Dying. This perhaps reflects an increased attention, understanding and specialisation within symptom management, and an increased focus on care specific to the last days and hours of life.

Following the development of the updated EAPC Recommendations, each themed group was asked to complete an initial matrix to develop/identify specific:

1. Learning Outcomes against the newly developed recommendations;
2. Learning Objectives that address: Knowledge and Understanding; Practical Skills; Personal Competencies;
3. Teaching Plans/Methods and Assessment Strategies - to address Outcomes and Objectives;
4. Required resources – to support training.

After early discussion, the matrix was further refined to enable the development of distinct Teaching Units for "core" Learning Outcomes with linked Learning Objectives, stratified by domain: Attitude; Cognition; Skills. Additionally, within the Teaching Units, notional hours were outlined to help provide structure to the final curriculum.

5.3 Internal Peer Review

Following development and population of the Curriculum Matrix, each teaching unit within each supra theme was reviewed by the Project Director (DM) and the Workpackage Lead (SM). Comments and suggestions on the teaching units were returned to group leads/members for further review/amendment and production of a final teaching unit to be integrated within the final Matrix. Once this had been completed, the Matrix was circulated across the EDUPALL team for further comment and sent for external peer review.

5.4 External Peer Review

To enable Peer Review and ensure Quality Control, the Matrix was circulated to experts from 27 European Countries, together with a brief survey instrument on the structure, content and organisation of the curriculum.

5.5 Result of Peer Review

A small number of additional Learning Outcomes and associated Learning objectives were suggested for inclusion within the matrix, including:

- differentiating between Palliative Care and Palliative Medicine;
- Paediatric Palliative Care;
- Palliative Care for Minorities.

There were conflicting thoughts regarding the number of hours dedicated to teaching sessions for Symptom Control, with peer reviewers indicating more time required, and others suggesting truncating certain elements (e.g. Dermatological Care) to expand Care of the Dying. Key areas for increased focus included “Advance Care Planning” and “Determining the Dying Phase / Prognostication.” Some challenges were raised regarding the overall notional 72 hours for the curriculum, with several peer reviewers identifying limited opportunity for expanding current provision within existing undergraduate medical curricula.

The additional Learning Outcomes, Learning Objectives and other issues suggested by external peer review were considered by the themed groups. Where appropriate, recommendations were

integrated into the final Matrix; for example, Care of the Dying was increased from two to three notional hours.

All reviewers that were consulted returned overwhelmingly positive comments on the draft Curriculum Matrix. There was large agreement that:

- Teaching units were logically organised;
- Learning Outcomes covered core training needs;
- Learning Objectives provided guidance for teaching sessions;
- Learning modalities were appropriately aligned;
- Assessment strategies were fit for purpose.

Indeed, one reviewer commented that:

> "We have carefully compared the presented curriculum with the curriculum running on the Faculty of Medicine – the document prepared is better drafted, more comprehensive and creates the excellent basis for Undergraduate Education in Palliative Care. It can serve as a sample for further development of the teaching of Palliative Care in medical universities (schools) worldwide."

The final version Curriculum Matrix is presented in Chapter 6.

6. EDUPALL Curriculum Matrix for Undergraduate Medical Education and Training in Palliative Care

6.1: Basics of Palliative Care; Psychosocial and Spiritual Aspects.

Topic	Teaching unit	Learning Outcome(s)	Learning Objectives: Cognitive/Knowledge and Understanding	Learning Objectives: Abilities/ Practical Skills	Learning Objectives: Attitude/ Personal Competencies	Learning modality Teaching Methods	Assessment modality	EAPC REC Syllabus
Basics of Palliative Care 5%	Palliative Care as an integrated discipline. **3 hr**	Describe and discuss critically the development, philosophy and practice of Palliative Care.	1. Define Palliative Care. 2. Explain the holistic principles of practice for Palliative Care. 3. Discuss Illness trajectories. 4. Multi-morbidity, frailty and polypharmacy 5. Understand the impact for patients and their families of living with a 'life-limiting condition'. 6. Explain how Palliative Care fits within medicine; public health agenda. 7. Discuss the challenges in the future development of Palliative Care at local, national and international levels.		1. Acknowledge and justify the integration of Palliative Care within mainstream medicine. 2. Recognise and address the challenges/misconceptions about Palliative Care. 3. Describe the value of integrating Palliative Care alongside disease modifying therapies (e.g. Palliative oncological therapies). 4. Recognise and respect the professional responsibility to care for people with life-limiting conditions, and their families, to ensure comfort and dignity.	Online Learning + Lecture	Short Answer Question (SAQ) Exam	International development of the idea of hospice and Palliative Care. Definitions of Palliative Care.
	Palliative Care in hospital and community settings. **3 hr**	Demonstrate an understanding of the types, levels and integration of Palliative Care Services.	1. Describe the physician's role in providing Palliative Care. 2. Differentiate between generalist and specialist Palliative Care. 3. Describe the role of associated health care professions in delivering Palliative Care: Physiotherapy; Occupational Therapy; Social Work; Psychology; and Pastoral Care. 4. Understand the practice and challenges of Palliative Care in differing organisational contexts (Hospital/Community/Hospice)		1. Recognise and respect professional responsibility to care for people with life-limiting conditions, and their families, across the entire lifespan (includes recognising of the needs of vulnerable / minority groups).	Visit to Hospice and Community Palliative Care Team + Online Learning + Seminar (Flipped Classroom)		Forms of organisation: outpatient; inpatient; consulting.

Psychosocial and Spiritual Aspects *20%*	Loss, Grief and Bereavement **3 hr**	Understand the causes and responses to loss and bereavement for patients (and their families) with chronic illness.	1. Identify and describe the losses (and their impact) that patients and their families face across the illness trajectory (and for families, after death). 2. Differentiate between loss, grief, bereavement and mourning. 3. Describe "normal" grief patterns. 4. Identify common loss/grief models and describe their value for practice including complicated grief.	1. Demonstrate an understanding of, and ability to screen for risk factors for complicated responses to loss/bereavement in the patient and their family.		Online Teaching and Seminar + Bed side training	**MCQ** **Open ended question**	Psychological reactions to chronic illness, grief and loss. Impact on patient and family of loss of independence, role, appearance, sexuality and perceived self-worth.
	Psychosocial Care **3 hr**	Understand the impact of disease on psychological and social functioning for patients (and their families) with chronic illness.	1. Identify and describe role transitions and effects (psychological, social and spiritual) for the patient and their family. 2. Identify how cultural (including religion) and ethnic differences may impact on psychosocial adjustment to disease. 3. Describes the expectations and roles within the multidisciplinary team in supporting/providing psychological and social care.	1 Demonstrate empathetic understanding of the psychological responses to stress/loss, and the link between coping and psychological dysfunction/disorders.	1. Shows a commitment to support and engage with psychosocial issues.	Seminar (Flipped Classroom) + Bed side training	OSCE + Short Answer Question	Family dynamics. Ethnic, social and religious differences. Coping Strategies.
	Practical issues at the end-of-life for patients and families **3 hr**	Understand the practical challenges at the end of life for patients with chronic illness, and their families.	1. Identify and explain the key challenges in preparing for the end of life for patients and their families. 2. Identify where to access help for patients and families to deal with practical, financial and legal issues – and explain how such services work.	1. Demonstrate how a doctor can support concerns regarding practical and financial issues at end of life.		Lecture + Online Material + Seminar with Experiential Learning	OSCE + Short Answer Question	Dealing with practical, financial and legal issues near the end of life Facilitation of relatives and friends to come to visit a dying person from within the country and overseas

	Spiritual Care **3 hr**	Understand the importance of assessing and supporting patients and families' spiritual needs.	1. Defines spiritual care and explain the relationship / differences between spirituality and religion. 2. Describe how spiritual issues affect people with life-limiting conditions, and their families, throughout the continuum of care 3. Explains the role of the Doctor (and wider MDT) regarding spiritual care.	1. Recognises signs of spiritual needs/distress. 2. Demonstrates willingness to initiate discussion examining the patients/family's spiritual concerns.	1. Recognise the importance of the spiritual dimension in sustaining physical and mental well-being.	Seminar with Patient Narrative + Online Resources	MCQ Open questions Care plan assessment	Spiritualty: hope; life review; beliefs; meaning; coherence

6.2 Pain Assessment and Management

Topic	Teaching unit	Learning Outcome(s)	Learning Objectives: Cognitive/Knowledge and Understanding	Learning Objectives: Abilities/ Practical Skills	Learning Objectives: Attitude/ Personal Competencies	Learning modality Teaching Methods and Timings	Assessment modality	EAPC REC Syllabus
Pain Assessment and Management 25%	Pain and Total Pain in Palliative Care **2 hr**	Understand pain as a multidimensional experience	1. Describe causes and effects of different types of pain that may be experienced. 2. Explain the concept of "total pain". 3. Understanding that pain is influenced by multiple factors such as thoughts, activity, sleep mood and stress. 4. To differentiate between pain and suffering.	1. Identify the elements of total pain in a clinical pain assessment.	1. Reflect on the multidimensional nature of pain, considering pain as an impairment of body structure and function, which in turn limits activity and participation. 2. Be aware that there is more to pain relief than medication.	Lecture ½ hr On-line activities (e.g. IASP, exploring the experiences of patients with pain) + Seminar (Flipped classroom) /Clinical/practical work. 1 ½ hr	Short Answer questions in response to Case Studies OSCE – Demonstration of holistic approach for pain assessment Formative – Observation of Pain Assessment	Definition and concepts of pain. The concept of "total pain".
	Pain pathophysiology, classification and measurement **4 ½ hr**	Develop clinical skills and competencies in complete and correct pain assessment. Formulate pain diagnosis	1. Differentiate pain types: acute, chronic, nociceptive, and neuropathic 2. Recognize common features of visceral, somatic and neuropathic pain 3. Describe common mechanisms of pain; receptors, pathways of pain transmission and modulation, nervous centres. 4. Discuss the principles of multidimensional assessment of pain	1. Use validated pain assessment tools/scales/apps also for children and patients with cognitive impairment 2. Demonstrate the ability to conduct a thorough assessment, to understand pain from the holistic approach. 3. Formulate pain diagnosis statement.	1. Reflect on how chronic pain affects the patient's quality of life and the need for comprehensive assessment.	Experiential learning through bed side observation. Clinical (patient) simulation/ demonstration. Case-based learning and video resources Pain management tools via on-line activities. Lecture 1hr + Online activity 1 ½ hr Clinical/practical work 2hr		Anatomy, pathophysiology. Mechanisms of nociceptive pain (bone pain, soft tissue pain, and visceral pain). Mechanisms of neuropathic pain. Recognition of chronic pain features.
	Principles of pain treatment **8 hr**	Understands the complexity of pain management in Palliative Care and the importance of combining non – pharmacological treatment with pharmacological treatment prescribing pain	1. Explains the principles of good prescribing in a Palliative Care setting. 2. Outlines factors that influence the choice of pain management options 3. Describes common non-pharmacological approaches to pain management	1. Prescribes appropriate dosages, forms and routes of administration for given pain cases including prescription for breakthrough pain. 2. Calculates and adjust the dose of morphine.	1. Be aware of pharmacological and non-pharmacological methods for pain management. 2. Overcomes concerns/fears of using morphine for severe pain.	Experiential learning through bed side observation Case-based learning Seminar +Self-Directed study Small Group Seminar 2 x 2hr.		Principles of pharmacological treatment. Pharmacokinetics and dynamics of opioids, non-opioids & adjuvant analgesics.

		medication and co-analgesics based on drugs pharmacokinetics	4. Discuss the WHO Pain ladder and its use for management of cancer pain. 5. Outlines analgesics and co-analgesics drugs: pharmacokinetics and pharmacodynamics. 6. Describes how to commence opioid treatment in cancer pain: initiation, titration. 7. Explains the side effects of opioids and how to manage them. 8. Correlates use of various co-analgesic drugs with pain characteristics			Clinical/practical work 4hr		Routes of drug administration and their indications, alternative routes when oral is not possible. Non-pharmacological pain management.
	Barriers in pain management **2 hr**	Demonstrate understanding of their country specific opioid legislation Evidence of exploration and understanding of myths regarding opioid use	1. Evaluate the current barriers in pain management: national and international policy; and popular myths concerning opioids. 2. State the legal requirements for prescribing morphine.	1. Demonstrate how to address patients/families/ professionals false beliefs concerning pain management.	1. Reflect on the negative impact of existing myths related to opioid use, on patient's analgesic treatment compliance. 2. Consider pain management a priority and advocate for patients for good pain relief	On-line activities 1hr + Seminar (Flipped classroom) /Clinical/practical work. 1 hr		Organisational and legal problems Special prescription forms.

6.3 Symptom Assessment and Management

Topic	Teaching unit	Learning Outcome(s)	Learning Objectives: Cognitive/Knowledge and Understanding	Learning Objectives: Abilities/ Practical Skills	Learning Objectives: Attitude/ Personal Competencies	Learning modality Teaching Methods and Timings	Assessment modality	EAPC REC Syllabus
Symptom Assessment and Management 25%	Principles of Symptom Assessment and Management **2 hr**	Understand the core principles, assessment, diagnostics and treatment of common symptoms in Palliative Care.	1. Discuss the principles of symptom management according to the stage of disease, and the impact on the patient and their family 2. Appraise the similarities/differences in symptom management in curative/disease modifying therapy versus a Palliative Care approach 3. Describe the principle of continuous and 'as-required' medication.	1. Use a systematic approach (e.g. the OPQRSTUV framework) to investigate symptoms when undertaking a holistic assessment.	1. Identify the importance of the individuals' goals and concerns regarding treatment. 2. Explain the value of the interdisciplinary approach to symptom assessment.	Class room teaching 1hr + Experiential learning through bed side observation – 1hr	Formative – Observation (Clinical Practice/Simulation) + Short Answer Exam Questions Structured Review of evidence base for one symptom.	Disease modifying treatment Palliative treatment Palliative medicine Interdisciplinary options
	Assessment and Management of Fatigue, Digestive and Respiratory Symptoms in Palliative Care **8 hr**	To asses and manage common symptoms Palliative Care using best evidence guidelines and protocols of care.	1. Outline common causes of common symptoms, including: Constipation; Diarrhoea; Nausea/ Vomiting; Anorexia/ Cachexia; Fatigue; Oral problems (Xerostomia, Dysphagia); Dyspnoea; and Cough. 2. Describe and justify management plans, incorporating pharmacological and non-pharmacological approaches to care.	1. Explain and Provide advice/education to people with life-limiting conditions, in the context of the management of symptoms.	1. Reflect on how each symptom affects the quality of life of the patient. 2. Examine the limits of pharmacotherapy in relieving all/every symptom – and the doctors continued role in patient support.	Online learning 6hrs + Seminar/Experiential learning through bed side observation – 2hrs		Gastrointestinal symptoms. Anorexia, Cachexia and Fatigue Oral Care Pulmonary symptoms
	Dermatologic conditions. **2 hr**	To assess, (prevent) and manage dermatologic conditions associated with life-limiting conditions using best evidence guidelines and protocols of care.	1. List the main signs and symptoms of dermatologic conditions in palliative care (pressure ulcers, lymphoedema, malignant ulcers).	1. Develop a management plan for patients with dermatologic conditions to provide symptom relief, including pharmacological and non-pharmacological approaches. 2. Demonstrate ability to explain the approaches for preventing the development of dermatologic conditions such as pressure sores and lymphoedema.	1. Adopt the practice of routine screening for dermatologic conditions (e.g. the common sites of pressure ulcer formation)	Online learning 1hr Clinical placement/ seminar – 1hr		Dermatologic symptoms

	Neuropsychiatric disorders. **3 hr**	To assess, prevent and manage uncomplicated neuropsychiatric symptoms associated with life-limiting conditions using standard guidelines or protocols of care	1. List main signs and symptoms of neuropsychiatric disorders in palliative care, including: Delirium; Depression; Insomnia. 2. Describe causes of neuropsychiatric disorders and explain the principles of clinical management including pharmacological and non-pharmacological approaches	1. Develop a treatment plan for patients with uncomplicated neuropsychiatric disorders.	1. Identify the functional and psychological impact of the discomfort caused by neuropsychiatric disorders on both the patient and family.	Online learning 2hr + Flipped classroom 1hr		Neuropsychiatric symptoms
	Care of the dying patient **3 hr**	To recognise, asses and manage the care of the dying patient using best evidence guidelines and protocols of care.	1. List five common signs that a patient is dying. 2. Describe methods and tools of prognostication, as well as their limitations. 3. Discuss potentially reversible causes of clinical deterioration. 4. Describe the 10 principles of patient management in the last days and hours of life**.**	1. Engage anticipatory prescribing for the main symptoms in dying patients. 2. Explain the situation to patient and their family	1. Accept and embrace that care for the dying is part of a doctor's role. 2. Reflect on the challenge of changing goals for a patient, from enhancing quality of life to comfort and a dignified death.	Online learning 2hr + Seminar/ Experiential learning through bed side observation – 1 hr		Care of the Dying
	Emergencies in Palliative Care **1 hr**	Explain what is understood by emergencies in Palliative Care. Recognise and ensure timely management of Palliative Care emergencies.	1.List major emergencies in Palliative Care 2. Recognise and describe signs that could indicate an emergency in Palliativ Care (Hypercalcemia, Spinal cord compression, Superior vena cava obstruction, etc.) 3. Explain the appropriate way to respond to Palliative Care emergencies and describe a management plan. 4. Describe the impact of clinical emergencies for the patient and family.			Online learning - 1hr		Emergencies in Palliative Care

6.4 Ethical and Legal Issues; Communication; Teamwork and Self-Reflection.

Topic	Teaching unit	Learning Outcome(s)	Learning Objectives: Cognitive/Knowledge and Understanding	Learning Objectives: Abilities/ Practical Skills	Learning Objectives: Attitude/ Personal Competencies	Learning modality Teaching Methods and Timings	Assessment modality	EAPC REC Syllabus
Ethical & Legal Issues 5%	Decision making and models of care **1 hr**	Understand the ethical principles that underpin care models and the associated decision-making process.	1. Describe core ethical principles for Palliative Care.) 2. Critically compares the models of care (paternalist, partnership, and consumerist). 3. explains steps involved in the decision-making process	1. Apply the steps involved in the decision-making process in a given case. 2. Use ethical theory to justify clinical practice.	1. Reflects on the importance of ethical principles and rules in decision making in Palliative Care.	Online 2hr + Interactive Seminar – 1hr	MCQ + Reflective writing on a provided case study	Discussion of decision-making process in Palliative Care, particularly withdrawal or withholding of a Treatment Partnership vs paternalist models (optional)
	Advance care planning. **1 hr**	Describe the importance of advance care planning as a modality to prevent unwanted and futile treatment.	1. Define advance care planning and explain its importance 2. Describe the steps of the advance care planning process, such as the 5-step model 3. Recognise the ethical and legal principles that underpin and promote patient/family involvement in care planning. 4. Explain the concept of discontinuing some treatments and give examples of futile treatments in Palliative Care.	1. Demonstrate steps involved in the Advance Care Planning process in a given case.	1. Be aware of the moral and legal rights of patients (and families) to be fully informed (as required) to participate in decisions regarding future care.			Negotiating and placing 'Do-not-attempt cardio-pulmonary resuscitation orders (DNACPR or DNR) Exploration of advance care planning
	Palliative Care, physician assisted suicide and euthanasia. **1 hr**	Critically evaluate why Palliative Care is a human right.	1. Describe the international and national legal frameworks that support the development of Palliative Care services 2. Explain Palliative Care sedation and: the differences between Palliative sedation /Physician Assisted Suicide/Euthanasia; and what factors may prompt requests for PAS/Euthanasia.	1. Evaluate individual requests for euthanasia and PAS and their origin factors (personal, psychological, spiritual, social, cultural, economic and demographic)	1. Reflect why PC is a human right for all. (online + self-directed			Distinction between Palliative Care and euthanasia: double effect Ethical and legal differentiation in the national and international context euthanasia/PAS Palliative Care as a human right: justice and access

Communication with the Patient and their family: Assessment **2 hr**	Understand how to fully assess a patient, and their family, within a Palliative Care context.	1. Understand the process and strategies required in conducting a patient centred assessment. 2. Describe the process to establish patient understanding of his/her illness and the coping mechanisms. 3. Is able to identify patient's individual and specific features of communication, also relating to the individual patient.	1. Demonstrate ability to conduct a holistic assessment of a patient requiring palliative care.	1. Acknowledge the need to elicit all patients concerns – medical, psychological, social and spiritual. 2. Acknowledge the uniqueness of each patient (ethnic, cultural, spiritual, and educational) and the importance of assessing patient/family understanding of illness.	Seminar (Flipped classroom) + Simulation/Bedside training 3hr	Clinical Observation (Formative) + OSCE Reflective Writing	The perception of the patient's attitude towards their disease
Planning and conducting family meetings 1 hr	Understand how to fully assess a patient, and their family, within a Palliative Care context	1. Describe trigger situations that request organizing family meetings 2. Explain the steps in organizing a family meeting. (online)	1. Demonstrate ability to develop a plan for a family meeting in response to practical issues.	1. Show respect for family members' contribution and involvement in the decision process and care.			Specific communication issues: talking to relatives

Communication 15%	Core Communication Skills for Palliative Care 3 hr	Understand the practical application and effect of core communication skills.	1. Describe and distinguish communication issues within key relationships: practitioner – patient; patient – family; practitioner – practitioner. 2. Use active listening in various medical encounters. 3. Describe a minimum 5 techniques to facilitate communication and active listening. 4. Understand and explain the effects of empathy in clinical care. Critically reflect on own (his/her) strengths and areas for improvement in applying communication skills in medical practice.	1. Demonstrate ability to engage a person-centred approach when communicating with patients, their family and colleagues. 2. Demonstrate active listening and appropriate use of facilitating skills in clinical consultations 3. Perform a self-assessment of own communication skill based on a given model. 4. Seek and discuss feedback received on own communication skills	1. Recognize the importance of communication skills in medical practice and strive to constantly improve them.	Online – MOOC + Bedside training 3hr	Models of Communication Self-awareness Knowledge of strengths and weaknesses in communication skills
	Communication Challenges in Palliative Care - *Breaking Bad news* **2 hr**	Evaluate and respond to challenging situations that may be encountered by employing facilitative communication skills and strategies.	1. Recognise when information may be perceived as "Bad News". 2. Critically understand the sequence and relationship between the steps in breaking Bad News (from an accepted model – e.g. SPIKES.	1. Demonstrate patient centred approach to breaking bad news to (simulated) patients/family member.	1. Value the individual wishes of patients and their families – responds with patient centred, empathetic communication	Online + Interactive Seminar/Simulation / Bedside training	Models of effective communication (SPIKES
	Communication Challenges in Palliative Care: *Conflict* **2 hr**		1. Identify what prompts anger and conflict in patients, their family, and within the multidisciplinary team. 3. Recognise and contrast different types of communication in conflict (assertive, passive and aggressive) with implications for clinical practice.	Demonstrate use of communication strategies when responding to conflict/aggression in clinical situations.		Interactive Seminar/Simulation	Angry relatives; demanding relatives, divergent opinions among relatives
	Communication Challenges in Palliative Care. *Dealing with collusion* **2 hr**		1. Evaluate why collusion may be requested by family members; 2. Explain the impact of collusion on patient, families and professional team.	1. Demonstrate the steps of an accepted strategy/algorithm for dealing with collusion.	1. Reflect on rights regarding confidentiality, honesty and patient and family autonomy/duty of care.	Online + Interactive Seminar/Simulation / Bedside training	Dealing with collusion

Teamwork & Reflection 5%	Teamwork and Team dynamics **2 hr**	Can explain what teamwork is in the palliative care context.	1. Discuss the differences between personal work, group work and teamwork. 2. Explain why teamwork in PC ensures the best care for the patient. 3. Understand that PC teams' dynamic is based on interdisciplinary working/cooperation.	1. Apply teamwork communication skills: listen to team member's ideas; explain r own ideas; be aware of other team members' feelings. 2. Reflect over team activities and team members interactions.	1. Team discussions are based on respect of other team member's values.	Online + seminar + self-directed learning	Situational judgement test based on an online teamwork situation	Roles and responsibilities of Palliative Care Multi-Disciplinary Team (MDT) and effective delegation
		. Can ask for help and give support in teamwork context.	1. Recognise the different professional roles and their complementarity in PC teams. 2. Understand that teamwork empowers team capacity and team members.	1. Be able to provide and receive feedback.	1. Understand how attitude influences the team, and team members, in a positive or a negative way.			How to work in a team
	Self-care **1 hr**	Understand the impact of daily work on one's own well-being and importance of self-care	1. Recognise the impact of patient's emotions and suffering on oneself. 2. Identify signs of professional fatigue.	1. Apply the most useful self-care/recovery habits for oneself.	1. Values self-awareness, self-reflection and self-Care.	Testimonials + Seminar – 1hr:	Reflective writing about a selected reading on this topic in PC	Burn-out – prevention and avoidance Mindfulness or other techniques
	Limits and goals of Medicine **1 hr**	Understand and accept the shifts of the goals of care during the disease trajectory.	1. Recognise our limits as 'healers'. 2. To understand that always there is something that we can do.		1. That death is a part of life and is not a taboo subject.			Perceptions of doctor's role (saviour vs healer; avoidance and prophylaxis)

7. Curriculum Implementation and Assessment

With a model curriculum drafted, several issues require consideration before the curriculum can be appropriately implemented.

7.1 Timing of Palliative Care Training

There is little clear evidence on the ideal time for medical students to learn about Palliative Care, and no suggestion or guidance is provided within the EAPC Recommendations. In a systematic review of the provision of palliative care training, Lloyd-Williams and MacLeod found no evidence to indicate an optimal time for learning the principles and practice of Palliative Care [42]. However, in a review of the impact of Palliative Care education through the six years of medical training at Cambridge, Barclay and colleagues noted a tendency for more positive attitudes to develop in the later 'clinical' training years (Years 4-6), whereas more negative attitudes occurred during the early 'core science years (Years 1-3) [43].

With no clear evidence on when the optimal time to learn about Palliative Care, the EDUPALL group reviewed their own experience in delivering training. It was perceived that training was most likely to have meaningful impact in the later years, once sufficient scientific knowledge and practical clinical experience had been attained, enabling the holistic and patient centred focus of Palliative Care to be located within the context of clinical care. It was also thought that a distinct block of training time that focusses specifically on Palliative Care is required, as opposed to teaching integrated within other specialty training, to ensure conceptual clarity on the place of Palliative Care within clinical care. Nevertheless, short priming sessions should be engaged in early years, as preparatory work for engaging with the Palliative Care curriculum.

7.2 Locating Palliative Care within existing undergraduate medical curricula

A key challenge for those seeking to promote Palliative Care in undergraduate training is finding space in an already crowded medical curriculum. In a survey of curriculum coordinators, Gibbins [44] notes eight factors that can help facilitate the adoption and integration of Palliative Care within existing curricula;

1. Prove the Need Nationally / Locally: through national guidance documents;
2. Establish Curriculum: Access to an appropriately developed curriculum;
3. Enthusiastic Lead: Clinician with professional and education expertise, with appropriate institutional support;

4. University/Medical School Support: support at senior level;
5. Exams: crucial to support/establish questions on Palliative Care within end of year / final exams;
6. Evaluation: Impact of education and training on student development and (if possible) patient care;
7. Funding: To support academic leads and enable access to clinical sites / mentors;
8. Engagement with Palliative Care Services: to provide opportunities for clinical education.

Key within the factors outlined by Gibbins is the need for a champion within the medical school curriculum development board/group, to advocate for the inclusion of Palliative Care within the existing curriculum.

7.3 Developing Faculty and Clinical Placements

Increasingly as Palliative Care is identified as core or a compulsory component within undergraduate education, consideration needs to be given to the development of appropriate faculty to support and facilitate training, and on partnerships with Palliative Care service providers who can provide access to clinical training. Accordingly, suggestions from the EDUPALL group are provided (Table 3) on the "ideal" criteria for appropriate clinical placements, and minimum criteria for trainers/program leaders, respectively.

Table 3. Criteria for Palliative Care centres accredition for clinical placement

Criteria for Educational/Clinical Placements	Criteria for Programme Leaders
1. Palliative Care services in place for $\geq$ 2 years; 2. Estabished Multidisciplinary team (MDT); 3. Opportunity for Continuous Professional Development (CPD) for members of MDT; 4. Caring processes aligned with national standards and/or legislation; 5. Range of complexity and diversity of cases (patients); at least 20% non-malignant disease; 6. Number of admissions per month > 20 7. Capabile of running a recognised educational programs; 8. Educational Infrastructure (teaching room / IT access / support/coordinating staff?); 9. Access too informational materials for patients and families and for professionals (the last will be included in the library); 10. Provides access to academic and clinical mentorship.	1. A Consultant Physician; 2. Palliative Care Speciality / Subspecialty Qualification; 3. Clinical experience in Palliative Care (> 5 years); 4. Position in a Specialist Palliative Care centre (> 50% of time); 5. Recogniton at Academic / Institutional level for the role of coordinator in Palliative Care Education; 6. Formal training in Leadership / Education (e.g. Post Graduate Certificate); 7. Participates in annual peer review.

Further guidance on the necessary competencies of a good clinical teacher are proposed by Paal et al., including: Organising the Learning; Knowing the Field and State of the Art; Being Ready to Learn; Teaching and Leading by Example; Being Real [45].

7.4 Assessing the effect and impact of the curriculum

A key challenge with any clinical education/training is appropriately assessing the effects upon the development of the clinicians, and the impact upon the patients and families they care for. In addition to formal exam procedures such as 'Best Answer Questions' and 'Observed Structural Clinical Exams', numerous novel approaches have been developed in an attempt to assess higher levels of impact, as outlined in Kirkpatrick's framework of effect (Fig. 2) [46].

Figure 2 - Kirkpatrick's Hierarchy

Innovative approaches, including reviews of reflective writing [47] or more traditional formal assessment tools [43], have been widely reported [48]. One approach that enables assessment of a large cohort and has the capacity to establish regional and national benchmarks is the IMEP Tool [49]. The IMEP assessment tool is a validated psychometric assessment which is theoretically underpinned by Bandura's Self-Efficacy [50]. The IMEP tool is available in an electronic format that enables easy access to recording and retrieving data and can be presented in multiple translated versions: currently there are seven EORTC translated versions of the IMEP tool available, with two versions available electronically.

8. Conclusion and Next Steps

As the changing demographic profile of Europe's population results in increased need and increased demand for palliative care services, the EDUPALL curriculum is a first step in ensuring that 'tomorrow's' doctors are prepared to meet that need. The curriculum described is based on the updated EAPC recommendations of 2013, designed as a 72-hour blended curriculum that provides three European Credit Transfers (ECTS). The curriculum covers seven major themes: Basics of Palliative Care; Psychosocial and Spiritual Issues; Pain Management; Symptom Management; Ethical and Legal Issues; Communication; and Teamwork and Self-Reflection. The the experience of the EDUPALL consortium members, combined with the input from established expert reviewers, has resulted in a curriculum that is relevant to the wider European and International community. The EDUPALL Curriculum also provides an opportunity to set a quality threshold for benchmarking undergraduate training and education across Europe.

The overarching aim of the EDUPALL project is the development of a universally adaptable and applicable curriculum, freely available in multiple languages. EDUPALL will provide a platform for the greater integration of Palliative Care within undergraduate medical training programmes across Europe.

8.1 Next Steps for EDUPALL

With the Curriculum Matrix outlined, the next phases in the EDUPALL Project are:

- Session Planning: Development and refinement of educational plans to support the teaching units - to ensure that classroom-based teaching is accompanied with practice based / clinical opportunities for medical students to develop their skills.
- Training of Faculty: identify minimum academic/clinical requirements for Faculty; establish approaches to support the development of academic faculty in preparation to deliver undergraduate Palliative Care education, including: review of teaching methods; experiential clinical learning; self-reflection; problem-based learning; mentoring skills; technology enhanced learning; and assessment methods;
- Implementation: The curriculum will be piloted in six Medical schools (Romania and Ireland) where students will be provided with training focused on the key domains of practice;
- Evaluation: Examination of the effect of the curriculum upon training for future practice;
- Updating: comprehensive updating to occur on a 5 yearly cycle.

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Appendix 1 - EDUPALL Consensus Revisions for the EAPC Recommendations for the Development of Undergraduate Curricula in Palliative Medicine.

Supra Theme	*Knowledge*	*Comprehension for*
1. Basic of Palliative Care	No revisions and/or addition	
2. Pain and Symptom Management	Bowel Obstruction - *Treatment options for partial or complete bowel obstruction* - *Surgical and non-surgical* - *Pharmacological and non-pharmacological* Pulmonary Symptoms: Dyspnoea - *Non-Pharmacological approaches* - *Principles and mechanisms of action of oxygen therapy* - *Assessment of patients and/or families concerns re breathlessness / suffocation* Pulmonary Symptoms: Cough - *Causes, mechanisms and management (Pharmacological and non-pharmacological)* Neuropsychiatric Symptoms - *Coma* Hydration (was added as a Symptom) - *Oedema* - *Types and Effects of Dehydration* - *Patients and Families perspectives and understanding* Anorexia, Cachexia and Fatigue - *Nutrition* - *Patients and Families perspectives and understanding* "Thirst, dry mouth" replaced with "Oral Care" - *Sore Mouth* - *Swallowing Problems*	***Recognition**: Identification of key signs and symptoms* ***Assessment/Diagnosis**: Approaches to assessment (including validated assessment tools and scales where relevant)* ***Effects**: Potential effects of the Symptom on the patient; their family -e.g. meanings ascribed to symptoms; fears associated with each symptom* ***Management:** Approaches to providing symptom relief, including pharmacological and non-pharmacological approaches*

	Dermatologic Symptoms - *Ulcerating Tumours* - Bedsores "Emergencies in Palliative Care" (was identified as a distinct theme) - *Superior vena cava obstruction* - *Major Haemorrhage* Care of the Dying - *Recognising the terminal phase* - *Discussions/awareness of patients/family* - *Care Plans* - *Anticipatory prescribing for Pain; Respiratory Tract Secretions; Nausea/Vomiting; Dyspnoea* - *Hydration and Nutrition* - *Terminal Anxiety and Sedation* - *Review of all medications / clinical interventions in best interest of the individual patient* - *Care after Death*	
3. Psychosocial and Spiritual Aspects	No revisions or additions	
4. Ethical and Legal Issues	Discussion of decision-*making process in Palliative Care* at the end of life, particularly abatement, particularly withdrawal or withholding of a treatment ~~The proper ways of~~ Negotiating and placing 'Do-not-attempt cardio-pulmonary resuscitation orders (DNACPR or DNR) Exploration of ~~proxy decision making, advance directives~~ and advance care planning *Palliative Care as a human right: justice and access* Distinction between ~~accepted~~ Palliative Care ~~practice~~ and euthanasia*: double affect*	Ethical aspects in medical *and shared* decision-making The reflection of one's own ethical attitude - (moved to section 6) The reflection of one's own attitude towards death and dying - (moved to section 6) *Partnership vs Paternalist Models (Optional)* The reflection about the physician's role in treatment of *Palliative Care* ~~end of life~~ patients

5. Communication	Models of *effective* communication Differentiation: ~~Verbal vs non-verbal communication~~ - *Meeting patients communication styles and level* - *Active listening* - *Empathetic communication* - *Signposting to reliable sources of information* ~~Special situations of communication~~ *Specific communication issues* - *dealing with collusion (optional)*	~~One's own shortcomings and strong points in perception and communication~~ *Knowledge of strengths and weaknesses in communication skills*
6. Teamwork and Self-Reflection	*Roles and responsibilities of Palliative Care Multi-Disciplinary Team (MDT) and effective delegation* *Respect and value in Palliative Care team* *Self-care* - Burn-out – *prevention and avoidance* - *Mindfulness* - *Perceptions of doctor's role (saviour vs healer;* avoidance and prophylaxis)	*Reflection of managing burdens* ~~one's own way how to manage burdens – one's own way how to manage~~ *and personnel concern* ~~The chance of debriefing oneself by~~ Supervision provision *The reflection of one's own ethical attitude* *The reflection of one's own attitude towards death and dying*

Key for Text Changes	*Italics* = new/inserted text grey text = existing text for context ~~strikethrough~~ = deletion of existing text