# European
# Professional Development Module PDM
# ANAESTHESIOLOGY in Geriatric Patients

***FROM THE STANDING COMMITTEE ON EDUCATION AND PROFESSIONAL DEVELOPMENT (EPD) OF THE SECTION AND BOARD OF ANAESTHESIOLOGY (EBA)***

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## *Part 1. General information about the European Professional Development Module for anaesthesiologists*

**The way to excellence: From ETR for trainees to the PDM for Specialists**

The European Training Requirements (ETR) in Anaesthesiology list learning objectives during specialty training which pave the way to harmonised quality of care and patient safety throughout Europe [1]. The next step to excellence in anaesthesiology requires professional development in a particular domain such as perioperative medicine, intensive care medicine, critical emergency medicine or pain medicine. The European Professional Development Modules (PDMs) for anaesthesiologists summarise learning objectives to enrich and increase competencies raising clinical experts and professional leaders to a higher level of qualification. The introduction of PDMs was discussed at the European Union of Medical Specialists (UEMS) Webinar in June 2021. The first European PDM was submitted to the UEMS in January 2022 and after several rounds of consultations and refinements the PDM in Pain Medicine for Anaesthesiologists was officially endorsed during the Autumn UEMS Council meeting in Brussels on October 19th 2024.

The road to a competent professional we call ETR, the road to mastery we call Professional Development.

**Scope of the PDM Anaesthesiology in Geriatric Patients**

The global population is rapidly ageing and this rate of growth is projected to speed up over the next 20 years. Pensions, healthcare and long-term care systems risk becoming financially unsustainable [3]. As part of the United Nations Decade of Healthy Ageing (2021–2030), the World Health Organisation (WHO) has identified health workforce development as part of its strategy to improve the lives of older people [4]. The UEMS has published the ETR in Geriatric Medicine with the aim of harmonizing training and practice across Europe in that specialty [5].

A significant percentage of the elderly population undergo surgical procedures because surgery offers definitive management of many age-related diseases [6,7]. Although surgery may relieve symptoms (reduce morbidity) and extend life (reduce mortality), older people are at higher risk of early and late postoperative complications and prolonged recovery [8,9]. Slow and incomplete functional recovery, in turn, results in poor quality of life and high healthcare resource usage and costs [10]. Considering the high societal and personal impact of healthcare in the cohort of geriatric patients undergoing surgery there is a need for mastery amongst multi-professional teams, including anaesthesiologists. Around surgical interventions, in emergencies and critical illness, as well as in pain clinics or equivalents the focus is on geriatric syndromes such as polypharmacy, memory problems, multi-morbidity, incontinence, neurological disorders, falls, preoperative risk assessment, patient optimization and prehabilitation. Considering the need for effective and safe healthcare services in the vulnerable ageing population, the ETR in Anaesthesiology includes competencies required for the management of geriatric patients in general and specific core domains of the broad field of anaesthesiology including the settings of perioperative, intensive care, critical emergency, and pain services [1]. However, not all learning objectives and clinical skills listed in the ETR in Anaesthesiology reach level D (perform and manage independently). Attaining full competencies in all domains of the broad discipline of anaesthesiology in the minimum training timeframe would be an ideal but impossible demand in any European country.

After completion of training in anaesthesiology, the PDM Anaesthesiology in Geriatric Patients will increase the number and level of competencies, enriching the knowledge skills and attitudes in this cohort. The aim of the PDM Anaesthesiology in Geriatric Patients is to provide a framework for

harmonising the practice and teaching of advanced perioperative medicine, intensive care medicine, emergency medicine and pain medicine in the ageing population across Europe. Empowering anaesthesiologists through a competency-based professional development programme will give sustained benefit to European citizens. Anaesthesiologists with the PDM Anaesthesiology in Geriatric Patients will have the expertise to cooperate in multi-disciplinary teams with specialists in geriatric medicine in delivering the multidimensional diagnostic process in order to develop plans for treatment and long-term follow up (comprehensive geriatric assessment). In countries not yet having established geriatric medicine the role of the PDM Anaesthesiology in Geriatric Patients will be more important.
Some tasks in the specialty of anaesthesiology may, in future, be performed with the help of robots or artificial intelligence. In geriatric medicine there will always be the need for humans with humanity and compassion to deliver care. Empowering specialists in anaesthesiology in ethics and professionalism will further contribute to the sustained societal impact of the PDM Anaesthesiology in Geriatric Patients.

**Development of the PDM Anaesthesiology in Geriatric Patients**

In December 2022 the European Board of Anaesthesiology (EBA) appointed a working group within the Standing Committee on Education and Professional Development (EPD) to develop a PDM for specialists in the multidisciplinary field of geriatric medicine. The manuscript was discussed at the EBA autumn meeting 2023 among EBA Delegates and approved by the EBA Board.

**Programme structure for the PDM Anaesthesiology in Geriatric Patients**

The minimum training duration is 6 months. The authority responsible for governing and ensuring the adequacy of medical training in European countries can decide to count previous experience gained through clinical practice and additional recognised training (e.g. accredited courses, fellowships, observerships) in the clinical field. According to the UEMS basic principles training is competency-based and not number- or count-based.
The training programme includes a variety of training activities including attendance at training courses, lectures, work with outpatients, at nursing homes, interventional procedures, ward rounds, multidisciplinary meetings, clinical research and medical simulation training. Training activities are not uniform throughout Europe and depend on national structures and processes in each location.

**Candidates for the PDM Anaesthesiology in Geriatric Patients**

The PDM Anaesthesiology in Geriatric Patients has been developed for anaesthesiologists who have successfully completed a specialist training programme consistent with the EBA UEMS ETR in anaesthesiology and wish to attain a higher level of competency in the multidisciplinary field of perioperative geriatric medicine.

**Trainers for the PDM Anaesthesiology in Geriatric Patients**

The trainer should be a recognised expert in the field of perioperative treatment of geriatric medicine with sufficient practical and teaching experience. They must fulfil the requirements of a trainer as stated in the ETR in anaesthesiology (part 3):
Training staff must have competence level **E** in the assigned area of training.
Training staff must have sufficient time allocated for the training assignment.
Training staff must have knowledge about the PDM Anaesthesiology in Geriatric Patients.

Training staff must have a positive attitude towards clinical training and expertise in didactic teaching, a clear commitment to theoretical teaching and practical instruction of trainees within the full range of clinical practice.
Combinations of competencies in clinical practice, teaching and scientific work are beneficial. Educational trainers do not themselves have to be researches, but collaboration between educational trainers not involved in research and researchers is recommended.

**Training institutions for the PDM Anaesthesiology in Geriatric Patients**

High quality training can only be provided in high quality training centres by high quality trainers and must be assessed in a meaningful and robust way. Whether the training programme is delivered in one hospital or more than one hospital (with rotation of the trainees), it must offer all relevant specialties and subspecialties involved in providing medical treatments in geriatric patients.
All relevant clinical activities must be available so that the clinical skills and attitudes listed in part 2, including expertise in invasive techniques, monitoring technologies, diagnostic methods and psycho-social skills can be learned.
Faculty, teachers, trainers, consultants and tutors must be available in sufficient numbers for the trainer-trainee ratio to support efficient and effective training. Manpower planning is under the jurisdiction of each member state according to their needs.
Educational activities including lectures, meetings, seminars on matters such as mortality and morbidity, critical incident reporting and clinical audit must be available in sufficient number.
Regular participation in training in medical simulation scenarios must be made available to support improvement in non-technical skills as well as technical and teaching skills.
To support accreditation of training centres, internal and external audits are highly encouraged by UEMS EBA.
Certified programmes, diplomas, university courses, mentoring/coaching programmes and e-learning must offer the content described in part 2 below.

**Assessment of competencies in the PDM Anaesthesiology in Geriatric Patients**

All training activities in the programme are to be recorded. Documentation recommended by the EBA includes:

- logbook
- portfolio (e-portfolio)

The logbook should document all clinical procedures and cases.
The portfolio continuously records progress and acquisition of competencies, interventions at the specific competence level, instruction from the trainer, self-reflection on the management of the case and the value for progress in the training programme. Regular meetings of the trainer with the PDM learner permit provision of guidance and planning further learning for progress.
Review of logbooks and portfolios also allow quality control of the training institution.
A combination of formative and summative assessment should be used for assessing the status of the competencies acquired as outlined in the *Handbook on Competence-based Teaching and Assessment: A guide for trainers of the European Board of Anaesthesiology (EBA)* [1].

**Completion of the PDM Anaesthesiology in Geriatric Patients**

The EBA recommends that national regulatory authorities, chambers of physicians, and / or scientific societies document completed PDM specialist training as a certificate in advanced training within anaesthesiology.

In future the EBA will propose European certification from UEMS for advanced training in a PDM to facilitate specialists' mobility throughout Europe.

**Content related to medicine in geriatric patients from the ETR in anaesthesiology**

Knowledge and general competencies already gained during specialist training in all age groups according to the ETR in anaesthesiology need to be refreshed and clinical skills increased throughout to competence level **E.**

Items from ETR domain 1.1 on perioperative medicine, patient assessment and risk reduction

Items from ETR domain 1.7 on intensive care medicine

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## *Part 2. Domains and competencies in the PDM Anaesthesiology in Geriatric Patients*

**Descriptions of domains**

The following list of domains of expertise and the competencies within these domains are to be obtained during PDM training:

*1. Domains of general competencies in geriatric patients*

1.1 Physiology of ageing
1.2 Geriatric syndromes and illnesses
1.3 Pharmacological therapy and non-pharmacological interventions
1.4 Comprehensive geriatric assessment
1.5 Ethics and legal issues
1.6 Structures, health care economics and quality assurance

*2. Domains of specific competencies in anaesthesiological settings*

2.1 Preoperative management of geriatric patients
2.2 Intraoperative management of geriatric patients
2.3 Postoperative management of geriatric patients
2.4 Critical illness and emergencies in geriatric patients
2.5 Pain medicine in geriatric patients
2.6 Teaching and research

**Learning objectives of PDM**

For each domain, learning objectives are divided into knowledge, skills and attitudes that are deemed necessary to achieve the required level for each competency. For advanced training in a PDM the EBA uses different descriptors for competency levels compared to the definition used in the ETR:

**A1** basic concepts
**A2** knows generally
**A3** knows specifically and broadly
**B1** assists, direct observation
**B2** performs safely with reasonable fluency under direct supervision
**B3** performs safely from start to finish with assistance
knows all the steps and the reasons that lie behind the methodology
**B4** performs safely and straight forward under indirect supervision
can adapt to well-known variations in the procedure encountered, recognises and is able to deal with most of the common problems, without direct input from the trainer
knows and demonstrates when help is needed, when to call for assistance/advice from the supervisor (knows personal limitations)
**C** performs safely and independently under distant advice
competent to do without assistance, including complications but may need help/advice
**D** performs safely and independently as an outstanding clinician and technician
can be trusted to carry out the procedure, independently, without need for help/advice

can deal straightforward and with difficult cases to a satisfactory level, without the requirement for external input

**E** instructs, supervises and teaches

**a. Knowledge**

Specific and wide knowledge at the level of competence **A3** including up-to-date evidence and exceeding the knowledge assessed in the European Diploma in Anaesthesiology and Intensive Care (EDAIC) is required for learning objectives (levels listed below in the domain descriptions).

**b. Clinical skills**

Specific and wide clinical and technical skills at level of competence **E** and implementation of advanced knowledge and up-to-date evidence is required in the PDM (levels listed below in the domain descriptions) unless otherwise explicitly indicated.

**c. Specific attitudes**

Specific attitudes uniform in all clinical settings of medicine in geriatric patients are only reported here and apply throughout the PDM Anaesthesiology in Geriatric Patients:

- Attain attributes in the generic roles as a professional leader, academic scholar, and inspired humanitarian including:
    - Treating patients and their relatives with empathy, respect, courtesy and without discrimination
    - 
    - Fulfilling duties and accepting responsibilities with integrity, honesty, confidentiality, probity and compassion
      Communication: excellent rapport, inspires confidence, listens well, clear and unambiguous, closed loop, methods (verbal, written, consultation or referral), manner (courtesy, integrity, respect)
    - Cooperation: always willing to help even if personally inconvenient
    - Self-motivation: hard-working, keen to learn, full of energy, goes beyond the call of duty
    - Stress response: copes well, seeks help when needed, thinks ahead, efficient even when under pressure
    - Promoting safety of patients and staff
- When developing a geriatric treatment plan always chose the simplest and safest among modalities with comparable efficacy
- Delivering patient information including alternatives and discussion of risks
- Teamwork with other health care professionals to ensure smooth patient care and safety
- Training in the management of rare adverse events and uncommon clinical situations in the medical simulation centre
- Commitment to critical incident reporting
- Careful, systematic, traceable documentation of pain medicinal considerations
- Dedication to monitoring, recording and improving the quality of pain management
- Consider that patients have the right to be heard, believed, and informed, regarding their symptoms, treatment and its management

## *1. Domains of general competencies in geriatric patients*

### *1.1 Physiology of ageing*

**a. Knowledge**

- process of healthy ageing
- effect of ageing on different organs and homeostasis
- effect of ageing on functional ability
- effect of ageing on psychology
- effect of ageing on pharmacodynamics and pharmacokinetics
- social theories of ageing
- demographic trends
- concepts to counteract the effects of old age
- effects of perioperative, intensive, emergency, pain medicine on ageing
- role of anaesthesiologists in geriatric patient education

**b. Clinical skills**

- be able to use different measures, assessment scales to assess geriatric patients
- be able to use different measures, assessment scales to recognise frailty
- prevent, recognise, document and manage side-effects of anaesthesiological interventions on organ function, cognitive and functional abilities in older people
- explain and discuss with older people the risks / benefits of perioperative, intensive, emergency, pain medicine treatment
- define and implement patient information material on ageing related to anaesthesiological interventions

**c. Specific attitudes**

- promote healthy ageing - the older patient's ability to meet basic needs, to learn, to grow and make decisions, to be mobile, to build and maintain relationships and to contribute to society

### *1.2 Geriatric syndromes and illnesses*

**a. Knowledge**

- acute and chronic disease in older adults including cardiovascular, cerebrovascular, respiratory, gastrointestinal, endocrine, renal, neurological, psychiatric, dermatological, musculoskeletal, thermoregulatory, haematological, cognitive disorders, cancer
- psychology of aging
- sensory loss including impaired vision, hearing loss
- vertigo, dizziness, syncope, stroke
- movement disorders including Parkinson's disease
- falls, gait disorders, reduced mobility, physical inactivity
- weight loss, malnutrition, dysphagia, anaemia
- dehydration, oedema
- osteoporosis, fractures
- sarcopenia, cachexia
- incontinence (urinary and faecal)
- cognitive impairment, dementia, delirium, pain, neuropathy, other behavioural changes

- depression, other psychiatric disorders
- fatigue, sleep disorders
- pressure ulcers
- frailty
- cancer

**b. Clinical skills**

- be able to identify common geriatric syndromes, their clinical specific or non-specific presentation including atypical signs, laboratory and other investigations as well as the degree of severity, dynamic evolvement towards improvement or deterioration, different response to therapeutic interventions
- be able to identify and avoid risk factors for common geriatric syndromes
- prevent, recognise, document and manage side-effects of anaesthesiological interventions on common geriatric syndromes, illnesses and problems
- explain and discuss with older people the risks / benefits of perioperative, intensive, emergency, pain medicine treatment on common geriatric syndromes, illnesses and problems

**c. Specific attitudes**

- optimize common geriatric syndromes, illnesses and problems before any anaesthesiological intervention in perioperative, intensive, emergency setting and pain medicine

## *1.3 Pharmacological therapy and non-pharmacological interventions*

**a. Knowledge**

- indications, contraindications, mechanisms of action, effectiveness, potential adverse effects, potential drug-drug interactions, potential food-drug interactions, alternatives for medications used common geriatric syndromes, illnesses and problems
- frequently prescribed drugs in geriatric patients including ulcer healing drugs, laxatives, diuretics, inotropes, antiarrhythmic drugs, antihypertensive drugs, drugs against heart failure and angina, anticoagulants, insulin, oral hypoglycaemic drugs, steroids, drugs for thyroid disease, drugs for osteoporosis, lipid lowering drugs, bronchodilators, anxiolytics, antipsychotics, antidepressants, antidementia drugs, antiepileptics, antiparkinsonian drugs, antibiotics, drugs for incontinence, analgesic drugs, vitamin, mineral and nutritional supplementation, enteral and parenteral nutrition, crystalloids, vaccines
- polypharmacy
- laboratory drug monitoring, laboratory assessment of renal, liver function
- potential drug-drug interactions between medications used in perioperative, intensive, emergency, pain medicine and medications used common geriatric syndromes, illnesses and problems
- principles of interventions such as rehabilitation, physical therapy, occupational therapy, use of physical aids, appliances and environmental adaptations
- non-pharmacological interventions to reduce common geriatric syndromes, illnesses and problems including applying circadian rhythm, light adjustments, hospital admission of relatives / animals, adequate nutrition, physical exercise, entertainment

**b. Clinical skills**

- be able to identify potentially inappropriate medications, food-drug interactions and discuss with multidisciplinary care team
- be able to identify under- and overuse of common medications used for common geriatric syndromes, illnesses and problems and discuss with multidisciplinary care team
- order, interpret and draw clinical conclusions from laboratory drug monitoring
- order, interpret and draw clinical conclusions from laboratory tests indicating deteriorating renal and/or hepatic drug elimination
- be able to avoid potential drug-drug interactions between medications commonly used in geriatric patient with medications used in perioperative, intensive, emergency, pain medicine

**c. Specific attitudes**

- recognise the principle of minimum intervention – using the simplest and safest treatment option(s) likely to be effective

## *1.4 Comprehensive geriatric assessment*

**a. Knowledge**

- definition as a multidimensional interdisciplinary diagnostic process focused on determining an older person's medical, psychological and functional capacity to develop a coordinated and integrated plan for treatment and long-term follow-up
- interpreting the detailed clinical assessment performed by the specialist in geriatric medicine including identification of patient's needs to the delivery of a multifaceted intervention that seeks to restore wellbeing, participation in activities, independence, ameliorate disability and distress

**b. Clinical skills**

- perform a thorough clinical assessment according to the bio-psycho-social model in geriatric patients including but not limited to mood, cognition, gait, nutrition, functional ability
- apply the comprehensive geriatric assessment of specialists in geriatric medicine in clinical settings of acute care, preoperative risk assessment, prediction of postoperative outcomes and the need for rehabilitation and their limitations

**c. Specific attitudes**

- cooperate in multiprofessisonal teams in an interdisciplinary way

## *1.5 Ethics and legal issues*

**a. Knowledge**

- ethical principles of autonomy, beneficence, non-maleficence, justice, confidentiality
- relevant country-specific medico-legal issues
- country specific legal framework for work with geriatric patients, adults with mental incapacity
- understanding the legal aspects of end of life decisions, power of attorney, guardianship
- patient rights, palliative care, if applicable assisted dying
- obtaining verbal and where appropriate written consent to anaesthesiological interventions
- understanding psychological needs in palliative care patients and their relatives

**b. Clinical skills**

- assess cognitive competence and capacity, and where lacking apply best interest-principle
- be able to devise a multidisciplinary pain management plan incorporating the patient's wishes

- discuss the ethical issues related to pain management (e.g. side effects of opioid escalation) in terminally ill patients and palliative care with the patients and/or their relatives/legal guardian
- act according to end-of-life decisions
- apply professionals (domain 1.10 in the ETR in Anaesthesiology) and patient safety (domain 1.11 in the ETR in Anaesthesiology) in the management of geriatric patients

**c. Specific attitudes**

- effectively communicate with patients and relatives, treat patients according to basic ethical principles and rights such as autonomy, privacy, dignity, confidentiality, including discussing end of life decisions, informed consent, error and incident disclosure
- adequate record keeping considering medico-legal implications

### *1.6 Structures, health care economics and quality assurance*

**a. Knowledge**

- national structures and financing of health and social care
- legislation of long- and intermediate term levels of care within the community including primary care, social services, day care, caregivers support
- national and international authorities for quality improvement

**b. Clinical skills**

- apply economic knowledge
- support interventions such as physical therapy, occupational therapy, aids
- support discharge from hospital and the continuity of care
- define and implement institutional standard operating procedures for the in-hospital care
- perform basic quality assurance and quality improvement work
- contribute to reduced hospital-related waste and to conscious resource management

**c. Specific attitudes**

- advocacy of quality improvement and health care economics

## *2. Domains of specific competencies in anaesthesiological settings*

### *2.1 Preoperative management of geriatric patients*

**a. Knowledge**

- interaction of geriatric syndromes, illnesses and problems with surgery- and anaesthesia-related risks
- scores relevant in the geriatric population such as on nutrition, risk of postoperative delirium, venous thromboembolism
- relevant national and international guidelines on perioperative medicine
- prehabilitation-based models of perioperative care

**b. Clinical skills**

- obtain appropriate investigations and consultations preoperatively
- optimize / organize optimization of the older patient's status

- implement national and international guidelines relevant to the preoperative period including preoperative fasting, pacemaker management, delirium / cognitive deficit, patient blood management, venous thromboembolism
- calculate scores relevant in the geriatric population and draw clinical management conclusions
- indicate anaesthesia procedures with least effect on the geriatric patient's status
- attest fitness for surgery including for outpatient anaesthesia and specific geriatric patient groups such as with morbid obesity, sepsis, trauma, ASA status ≥ IV
- support multidisciplinary multi-modal prehabilitation
- support discharge planning
- apply requirements for the outpatient setting including concise information sharing with relatives / primary care team following hospital discharge
- define and implement institutional standard operating procedures for preoperative management of geriatric patients
- performing shared decision making

**c. Specific attitudes**

- respect BRAN (Benefits, Risks, Alternatives and doing Nothing) methodology for shared decision making
- empathic communication for obtaining patient's or legal guardian's informed consent to a management procedure, including patients with impaired capacity of discernment and consent, and language barriers
- discuss indications for surgery in the multidisciplinary team considering the geriatric patient's status and requiring specific surgeries such as organ transplantation
- address preoperative lifestyle modification, involve relatives in perioperative journey

## *2.2 Intraoperative management of geriatric patients*

**a. Knowledge**

- interaction of geriatric syndromes, illnesses and problems with surgery- and anaesthesia-related risks
- relevant national and international guidelines on perioperative medicine

**b. Clinical skills**

- provide safe general and/or regional anaesthesia for all major and minor surgical procedures
- provide safe general and/or regional anaesthesia for all patient groups including specific geriatric patient groups such as with morbid obesity, sepsis, trauma, ASA status ≥ IV
- apply advanced monitoring such as depth of anaesthesia, neuromonitoring, cerebrovascular perfusion
- implement national and international guidelines relevant to the intraoperative period including delirium / cognitive deficit, patient blood management, venous thromboembolism
- let patients keep dentures and sensory aids until induction and ensure safe-keeping of such aids
- define and implement institutional standard operating procedures for intraoperative management of geriatric patients
- apply anaesthesia non-technical skills (domain 1.9 in ETR in Anaesthesiology) in the management of geriatric patients

**c. Specific attitudes**

- advocacy of the patient's goals and values, delivering patient-centred care

## *2.3 Postoperative management of geriatric patients*

**a. Knowledge**

- impact of postoperative delirium on morbidity and mortality, economics and on health care resource utilization
- relevant national and international guidelines on perioperative medicine including European Society for Clinical Nutrition and Metabolism (ESPEN) guidelines for enteral nutrition; avoidance of postoperative delirium; pain medicine
- support multidisciplinary rehabilitation

**b. Clinical skills**

- implement guidelines for perioperative medicine
- apply ERAS protocol adapted for geriatric patients
- early mobilisation, apply measures to reduce the risk of falls
- prophylaxis of postoperative complications such as venous thromboembolism, pulmonary complications, urinary tract infections, pressure ulcers
- define an appropriate multi-modal analgesic plan
- ensure patients have access to dentures and sensory aids in recovery
- make a plan for treatment escalation and advance care
- make a plan for treatment de-escalation, transfer to the ward, hospital discharge
- perform safe and effective handover from the recovery room
- perform prompt and accurate information sharing with relatives / primary care team following hospital discharge in the outpatient setting
- define and implement institutional standard operating procedures for postoperative management of geriatric patients

**c. Specific attitudes**

- advocacy of age-related impediments to recovery of preoperative capacity and independence
- awareness for the quality of patient's experience
- effectively communicate and interact with family doctors of patients in order to secure outreach of management

## *2.4 Critical illness and emergencies in geriatric patients*

**a. Knowledge**

- mechanisms and changes related to old age in acute and critical illness such as cardiovascular events, acute confusion, stroke, acute abdominal pain, major trauma, hypothermia, sepsis, organ failure
- influence of organ dysfunction related to acute and critical illness on the pharmacokinetics and pharmacodynamics of drugs
- comprehensive geriatric assessment in the intensive care and in emergency medicine
- prediction, prevention, and treatment of common complications of intensive care medicine and emergency medicine
    - association between pain, agitation and delirium
    - delirium prediction (including the use of scores), prevention, and treatment in critical illness
- monitoring sleep, quality of life, nutritional status

- mobilization and screening of rehabilitation need in intensive care
- understand issues related to triage and resource utilization in critical illness including extracorporeal membrane oxygenation

**b. Clinical skills**

- manage acute and critical illness with appropriate pharmacological, interventional (regional analgesia) and non-pharmacological methods in old age according to the multidimensional interdisciplinary comprehensive geriatric assessment
- indicate supportive aids such as implanted gastric tubes, implanted central venous catheters
- act according to end-of-life decisions e.g. in life-prolonging intensive care medicine, resuscitation in cardio-respiratory arrest
- perform palliative care when needed, avoid futility
- assess intensity of pain in non-communicative patient such as Behavioural Pain Scale / Critical Care Pain Observation Tool
- assess functional capacity, nutrition, muscular status, mental/emotional status for respiration, weaning from ventilator, screening of rehabilitation needs
- avoid sleep disruptions with pharmacological and non-pharmacological measures
- effectively communicate with patients, family member/legal guardian in patients unable to communicate about the clinical status, prognosis, alternatives
- effectively communicate and obtain consent from family member/legal guardian for invasive procedures in patients unable to communicate

**c. Specific attitudes**

- establish effective and empathic relation with patients, including patients with impaired mental capacity and their relatives/legal guardians
- awareness of how the workload and working environment in a dynamic and demanding ICU (e.g. advanced monitoring techniques producing large amounts of data to be processed) can be a distractor to empathetic patient care – treat the patient not just the disease
- be aware of and recognise early signs of burn-out and exhaustion in self and co-workers and provide empathic support to colleagues

## *2.5 Pain medicine in geriatric patients*

(2.1 in PDM Pain Medicine for Anaesthesiologists, at reduced skill competence levels)

**a. Knowledge**

- anatomical and physiological alterations associated with ageing and their impact on the presentation and responses to pain
- understand multifactorial nature of pain in older people
- conditions common in older people presenting with specific pain including skeletal pain (e.g. metastasis or osteoporotic fractures), chronic neuralgic pain, chronic visceral pain syndrome
- pain evaluation tools appropriate for the assessment of pain in elderly patients
- association of commonly present mood disorders in older people (anxiety and depression) with long term pain and their impact on quality of life
- changes in pharmacokinetics/dynamics of analgesic drugs occurring with ageing (NSAIDs, opioids, tricyclic antidepressants, anticonvulsants), and their influence on effectiveness, side effects and need for dose adjustment

- interactions of other prescribed drugs and comorbidities when establishing a pain treatment plan in older people
- scores and methods of assessing potential overdose, central nervous side effects, delirium, cognitive dysfunction

**b. Clinical skills**

- be able to assess intensity of pain in older people patient with impaired communication ability and cognitive decline (patients with dementia)
- use age appropriate and validated questionnaires and tools to assess and differentiate between acute and chronic pain
- establish a management plan prioritising facilitation of physical activity/performing activities of daily living **B3**
- monitor effects of pain management plan and adjust when needed **B3**
- combine non-pharmacological methods with pharmacological treatment of pain **B3**
- be able to integrate psychosocial interventions as part of a pain management strategy in older people population **B3**
- actively assessing potential side effects
- recognise and manage dependence and misuse of analgesics, ensure appropriate monitoring **B3**

**c. Specific attitudes**

- understand the importance of being able to stay active and integrated into social life for elderly patients, help the patient focus on the abilities she/he still has
- value of psychosocial interventions in older people population

## *2.6 Teaching and research*

- coaching and supervision by an adult learning specialist (andragogist)
- apply competency-based medical education and training (CBMET) according to the handbook on competence-based teaching: A guide for trainers published by the EBA (https://sites.google.com/view/eba-uems/eba-standing-committees/epd) for trainees in anaesthesiology
- quality management of trainer competencies according to the System for Evaluation of Teaching Qualities (SETQ), including 1) creating a positive learning climate, 2) professional attitude towards residents, 3) communication of learning goals, 4) evaluation of residents, 5) feedback to residents
- teaching, assessing and giving feedback in a simulation centre for at least **D**
- development of at least 1 simulation scenario for teaching and education **D**
- development of at least 10 multiple choice questions at the level of the national board certificate exam and / or the EDAIC
- educating physicians from other medical disciplines involved in the management of geriatric patients in anaesthesiology in geriatric patients **D**
- educating patients and the public **D**
- teaching undergraduate medical students **D**
- searching and reading the literature in pain medicine published within the last 5 years **A3**
- implementing scientific evidence into clinical management of geriatric patients **D**
- appraisal of scientific fraud, data fabrication **D**

# Appendix I. Entrustable Professional Activities (EPAs)

## Definition and Implementation of EPAs in the Training of Medical Specialists

### Definition:

**Entrustable Professional Activity (EPA)** is a unit of professional practice that can be fully entrusted to a trainee once they have demonstrated the necessary competence to perform the activity unsupervised. EPAs are tasks or responsibilities that a medical specialist must be able to perform proficiently and are used to assess and guide further training of medical specialists.

EPAs constitute both an expression **competency** (abilities possessed by trainees/applicants) and are also **units of professional work.**

Thus, the EPA is an integral part of the Logbook and is a comprehensive and holistic tool for Competence Based Assessment.

The purpose:

- It serves as a bridge between the Syllabus/Curriculum and the Eligibility Assessment
- to help fill the gap between competencies and clinical practice.

### Key Characteristics of EPAs:

1. **Integration of Competencies:** EPAs require the integration of multiple competencies (knowledge, skills, attitudes) across different domains.
2. **Observable and Measurable:** EPAs are specific activities that can be directly observed and measured.
3. **Context-Specific:** EPAs are tailored to the specific context and requirements of the medical specialty.
4. **Entrustability:** The ultimate goal is to determine whether the trainee can be trusted to perform the activity independently.

### Implementation in the Training of Medical Specialists:

**1. Identification of EPAs:**

- **Collaboration:** Develop EPAs through collaboration among educational leaders, clinicians, and stakeholders in the specialty.
- **Alignment:** Ensure EPAs align with the core competencies required by accreditation bodies and professional organizations.
- **Relevance:** Select EPAs that are essential to the practice of the specialty and reflect real-world clinical tasks.

**2. Structuring Training Programs around EPAs:**

- **Curriculum Design:** Integrate EPAs into the curriculum, ensuring that training experiences provide opportunities to perform these activities.
- **Learning Objectives:** Define clear learning objectives and milestones for each EPA.
- **Educational Activities:** Design educational activities, such as simulations, clinical rotations, and workshops, to support the development of skills required for EPAs.

**3. Assessment of EPAs:**

- **Direct Observation:** Utilize direct observation of clinical practice by supervisors to assess performance.
- **Feedback:** Provide formative feedback based on performance, highlighting areas of strength and areas needing improvement.
- **Multi-Source Feedback:** Incorporate feedback from peers, patients, and other healthcare professionals.
- **Simulation-Based Assessment:** Use simulation-based assessments for complex or high-risk EPAs.

- **Milestone Tracking:** Track progress through defined milestones, documenting the trainee's development and readiness for unsupervised practice.

**4. Entrustment Decisions:**

- **Mentors and Competency Committees:** A mentor following the trainee advancing through an educational module covering a specific domain uses the aforementioned assessment tools to make entrustment decisions upon completion of the module. Alternatively, competency committees can be established within the department/institution to review trainee performance data and make entrustment decisions.
- **Entrustment Scales:** wherever possible use standardized entrustment scales to evaluate readiness for independent practice.
- **Documentation:** Document entrustment decisions, ensuring transparency and accountability.

**5. Continuous Improvement:**

- **Quality Improvement:** Regularly review and update EPAs based on feedback from trainees, supervisors, and evolving clinical practice standards.
- **Research and Evaluation:** Conduct research to evaluate the effectiveness of EPA-based training and assessment in improving clinical competence and patient care outcomes.

### Suggestions for Implementation:

In the advanced training program in Anaesthesiology in Geriatric Patients, the following steps might be taken:

- **Define EPAs:** Identify key activities such as comprehensive Preoperative Risk Assessment and Optimization of Geriatric Patients, Intraoperative Management of Geriatric Patients, Postoperative Management and Prevention of Complications in Geriatric Patients, Management of Acute and Chronic Pain in Geriatric Patients, Comprehensive Geriatric Assessment in Anaesthesia Care, and Leadership and Advocacy in Geriatric Anaesthesia.
- **Integrate into Curriculum:** Ensure that rotations, workshops, and other educational activities provide opportunities to practice and develop these skills.
- **Assessment:** Utilize direct observation, case discussions, simulation, and multi-source feedback to assess trainee performance in each EPA.
- **Entrustment:** Mentors and/or competency committees review assessment data and make decisions about the trainee's readiness to perform activities independently.
- **Ongoing Review:** Continuously review and refine EPAs and assessment methods to ensure they remain relevant and effective.

By implementing EPAs in the training of medical specialists, programs can provide a structured and transparent pathway for trainees to achieve the competencies necessary for independent practice, ensuring high standards of patient care and professional development.

## Proposed Entrustable Professional Activities (EPAs) for the PDM Anaesthesiology in Geriatric Patients

These EPAs are designed to align with the competencies outlined in the PDM for Anaesthesiology in Geriatric Patients, ensuring that anaesthesiologists achieve mastery in managing this vulnerable population.

### EPA 1: Preoperative Risk Assessment and Optimization of Geriatric Patients

- **Description**: Conduct comprehensive preoperative assessments for geriatric patients, focusing on evaluating surgical and anaesthesia risks while optimizing conditions for successful perioperative outcomes.

**Domains of Competence:**

- **Medical Knowledge:** Understand the physiological changes associated with ageing, common comorbidities, and their implications for anaesthesia.
- **Patient Care:** Conduct comprehensive preoperative evaluations, including functional, cognitive, and nutritional assessments.
- **Interpersonal and Communication Skills:** Effectively communicate with patients, families, and multidisciplinary teams to develop individualized care plans.
- **Professionalism:** Demonstrate empathy, respect, and ethical considerations in patient interactions.
- **System-Based Practice:** Coordinate care with various healthcare providers to ensure seamless preoperative preparation.
- **Practice-Based Learning and Improvement:** Engage in continuous learning to stay updated on best practices in geriatric anaesthesia.

**Specific Tasks:**

- Perform thorough preoperative assessments, including history-taking, physical examinations, and appropriate diagnostic testing.
- Identify and optimize management of comorbid conditions such as cardiovascular, respiratory, and metabolic disorders.
- Assess and address factors like frailty, polypharmacy, and nutritional status.
- Develop and implement individualized prehabilitation programs to enhance surgical outcomes.
- Use principles of shared-decision making, facilitate informed consent discussions, ensuring patients and families understand the risks and benefits.

**Milestones:**

- **Level 1:** Identifies basic age-related physiological changes and common comorbidities.
- **Level 2:** Performs comprehensive preoperative assessments with supervision.
- **Level 3:** Independently conducts assessments and develops optimization plans.
- **Level 4:** Leads multidisciplinary preoperative planning and optimization.
- **Level 5:** Serves as a consultant for complex geriatric preoperative assessments.

**Assessment Methods:**

- Direct observation of clinical encounters.
- Case-based discussions.
- Multisource feedback from patients, families, and healthcare team members.
- Review of documentation in medical records.
- Simulation exercises.

**Expected Outcomes:**

- Demonstrate proficiency in assessing and optimizing geriatric patients preoperatively.
- Effectively communicate and collaborate with multidisciplinary teams.
- Enhance patient outcomes through individualized care plans.
- Exhibit professionalism and ethical behaviour in all patient interactions.

### EPA 2: Intraoperative Management of Geriatric Patients

**Description**: Provide anaesthesia care tailored to the physiological and pharmacological needs of geriatric patients during surgery.

**Domains of Competence:**

- **Medical Knowledge**: Comprehend the impact of ageing on pharmacokinetics and pharmacodynamics, and the implications for anaesthetic management.
- **Patient Care**: Provide tailored anaesthetic care, monitoring, and management during surgical procedures.

- **Interpersonal and Communication Skills**: Coordinate effectively with the surgical team to ensure patient safety.

- **Professionalism**: Maintain patient dignity and confidentiality throughout the perioperative period.
- **System-Based Practice**: Utilize available resources to optimize intraoperative care.
- **Practice-Based Learning and Improvement**: Reflect on intraoperative experiences to improve future practice.

**Specific Tasks:**

- Select and administer appropriate anaesthetic agents considering the altered physiology of ageing.
- Implement monitoring strategies to detect and manage intraoperative complications.
- Adjust anaesthetic plans in response to intraoperative findings and patient responses.
- Ensure meticulous positioning to prevent pressure injuries.
- Maintain normothermia and hemodynamic stability.

**Milestones:**

- **Level 1:** Understands basic anaesthetic considerations for geriatric patients.
- **Level 2:** Assists in the anaesthetic management of geriatric patients under supervision.
- **Level 3:** Independently manages straightforward intraoperative care for geriatric patients.
- **Level 4:** Handles complex intraoperative scenarios and complications.
- **Level 5:** Provides guidance and supervision to junior colleagues in geriatric anaesthesia.

**Assessment Methods:**

- Direct observation during surgical procedures.
- Simulation-based assessments.
- Feedback from surgical team members.
- Review of anaesthesia records.
- Self-reflective practice logs.

**Expected Outcomes:**

- Deliver safe and effective anaesthetic care tailored to the geriatric population.
- Anticipate and manage age-related intraoperative challenges.
- Collaborate seamlessly with the surgical team to enhance patient safety.
- Demonstrate continuous improvement in clinical practice through reflection and learning

### EPA 3: Postoperative Management and Prevention of Complications in Geriatric Patients

**Description**: Oversee the recovery of geriatric patients, addressing pain control, prevention of delirium, and the need for rehabilitation to improve function and reduce disability.

**Domains of Competence:**

- **Medical Knowledge**: Recognize common postoperative complications in older people and their prevention strategies.
- **Patient Care**: Monitor and manage postoperative recovery, focusing on pain control, delirium prevention, and the need for rehabilitation to improve function and reduce disability.
- **Interpersonal and Communication Skills**: Engage patients, families, and rehabilitation teams in postoperative care planning.
- **Professionalism**: Uphold ethical standards and patient advocacy in postoperative care.

- **System-Based Practice**: Navigate healthcare systems to coordinate comprehensive postoperative care.
- **Practice-Based Learning and Improvement**: Evaluate postoperative outcomes to inform and improve future practices.

**Specific Tasks:**

- Develop and implement multimodal pain management plans appropriate for geriatric patients.
- Identify and mitigate risk factors for postoperative delirium and other complications.
- To get involved in coordination of multiprofessional rehabilitation teams to initiate early mobilization and rehabilitation in cooperation with physical and rehabilitation medicine physicians.
- Address postoperative nutritional needs and prevent malnutrition.
- Recognize and manage signs of acute postoperative cognitive dysfunction and delirium.
- Educate patients and caregivers on postoperative care plans, expected outcomes, and warning signs of complications.

**Milestones:**

- **Level 1**: Recognizes common postoperative complications and basic interventions.
- **Level 2**: Assists in postoperative care under supervision.
- **Level 3**: Independently manages routine postoperative recovery.
- **Level 4**: Addresses complex postoperative complications with tailored interventions.
- **Level 5**: Provides leadership in postoperative care planning and innovation.

**Assessment Methods:**

- Direct observation of patient care.
- Case-based discussions and debriefings.
- Patient and family feedback.

**Expected Outcomes:**

- Reduce the incidence of postoperative complications.
- Improve functional recovery and quality of life in geriatric patients.
- Enhance communication and satisfaction among patients, families, and care teams.

### EPA 4: Management of Acute and Chronic Pain in Geriatric Patients

- **Description**: Diagnose and manage pain in geriatric patients using pharmacological and non-pharmacological interventions.

**Domains of Competence:**

- **Medical Knowledge:** Understand the pathophysiology and pharmacology of pain in older adults.
- **Patient Care:** Deliver individualized, multimodal pain management strategies.
- **Interpersonal and Communication Skills:** Communicate empathetically about pain with patients and caregivers.
- **Professionalism:** Advocate for safe and ethical pain management practices.
- **System-Based Practice:** Integrate pain management into a multidisciplinary care framework.
- **Practice-Based Learning and Improvement:** Adapt pain management strategies based on outcomes and new evidence.

**Specific Tasks:**

- Assess pain using validated tools for geriatric patients, including those with cognitive impairment.

- Develop and implement pain management plans incorporating pharmacological and non-pharmacological strategies.
- Manage complex pain cases, including opioid use and polypharmacy challenges.
- Collaborate with palliative care teams for end-of-life pain management.
- Monitor and mitigate side effects of pain therapies, such as sedation or gastrointestinal issues.

**Milestones:**

- **Level 1:** Identifies basic pain types and treatment options.
- **Level 2:** Assists in formulating pain management plans.
- **Level 3:** Independently manages acute and chronic pain with guidance.
- **Level 4:** Handles complex pain syndromes with a multidisciplinary approach.
- **Level 5:** Leads initiatives to advance pain management practices for geriatric patients.

**Assessment Methods:**

- Direct observation and feedback from trainers.
- Patient-reported outcomes and satisfaction surveys.
- Review of pain management documentation.
- Simulation-based skill assessments.

**Expected Outcomes:**

- Ensure safe, effective, and compassionate pain relief for older adults.
- Prevent chronic pain syndromes and reduce reliance on high-risk medications.
- Promote holistic, team-based approaches to pain management.

### EPA 5: Comprehensive Geriatric Assessment in Anaesthesia Care

**Description**: Incorporate comprehensive geriatric assessment (CGA) to inform anaesthesia care planning and improve patient outcomes.

**Domains of Competence:**

- **Medical Knowledge**: Master the components of comprehensive geriatric assessment (CGA).
- **Patient Care**: Integrate CGA findings into individualized anaesthesia care plans.
- **Interpersonal and Communication Skills**: Facilitate discussions with patients, families, and multidisciplinary teams about CGA results.
- **Professionalism**: Respect patient autonomy and preferences in care planning.
- **System-Based Practice**: Utilize healthcare resources to support CGA-driven care.
- **Practice-Based Learning and Improvement**: Reflect on CGA outcomes to improve care delivery.

**Specific Tasks:**

- Perform or interpret CGA, focusing on physical, cognitive, emotional, and functional domains.
- Tailor perioperative management strategies based on CGA findings.
- Advocate for CGA inclusion in institutional protocols for older surgical patients.
- Educate patients and families about the implications of CGA results on surgical risks and recovery.

**Milestones:**

- **Level 1**: Understands the purpose and components of CGA.
- **Level 2**: Participates in CGA under supervision.
- **Level 3**: Independently applies CGA findings to perioperative planning.
- **Level 4**: Leads multidisciplinary discussions using CGA data.
- **Level 5**: Advocates for and implements CGA in system-wide protocols.

**Assessment Methods:**

- Observation during CGA sessions.
- Peer and supervisor feedback.
- Review of CGA-based care plans.
- Participation in multidisciplinary case conferences.

**Expected Outcomes:**

- Deliver patient-centred, risk-informed perioperative care.
- Reduce adverse outcomes and enhance recovery in geriatric surgical patients.
- Promote CGA as a standard practice in anaesthesiology

### EPA 6: Leadership and Advocacy in Geriatric Anaesthesia

**Description**: Lead initiatives to improve care for geriatric patients and advocate for best practices within the healthcare system.

**Domains of Competence:**

- **Medical Knowledge**: Understand healthcare systems, quality improvement, and patient safety principles for geriatric care.
- **Patient Care**: Advocate for optimal care pathways for geriatric patients.
- **Interpersonal and Communication Skills**: Lead teams and communicate effectively with diverse stakeholders.
- **Professionalism**: Model ethical and professional behaviour in leadership roles.
- **System-Based Practice**: Drive systemic improvements in geriatric anaesthesia services.
- **Practice-Based Learning and Improvement**: Use data and feedback to refine care models.

**Specific Tasks:**

- Lead quality improvement projects targeting geriatric patient outcomes.
- Develop institutional guidelines for geriatric anaesthesia care.
- Educate and mentor peers and trainees on geriatric anaesthesia principles.
- Collaborate with healthcare administrators to allocate resources for geriatric care.

**Milestones:**

- **Level 1**: Identifies gaps in geriatric care quality.
- **Level 2**: Participates in improvement initiatives.
- **Level 3**: Leads small-scale projects to improve geriatric care.
- **Level 4**: Develops and implements systemic improvements.
- **Level 5**: Serves as a national or international advocate for geriatric anaesthesia.

**Assessment Methods:**

- Portfolio of leadership activities.
- Supervisor and peer feedback on advocacy efforts.
- Evaluation of quality improvement project outcomes.
- Participation in leadership training programs.

**Expected Outcomes:**

- Foster a culture of excellence in geriatric anaesthesia.
- Ensure institutional and systemic prioritization of geriatric care.
- Inspire and educate the next generation of anaesthesiologists in geriatric principles.