General Medical Council

Anaesthesia associate registration assessment (AARA) content map

The anaesthesia associate registration assessment (AARA) is the means by which qualified anaesthesia associates (AAs) can demonstrate their readiness to practice in the UK. It is set at the level of a newly qualified AA and will comprise of a knowledge test and an assessment of clinical skills using workplace-based assessment (WPBA).

Level of assessment

The purpose of the AARA is to ensure that AAs seeking registration in the UK have met a common threshold for safe practice that is appropriate to their point of entry to the register.

This AARA content map sets out the core knowledge, skills and behaviours needed for UK practice and any knowledge test and clinical skills assessment will derive from the content map and be set at a level reflecting the expectations of a newly qualified AA entering their first role in the NHS. It will accompany the PA and AA generic and shared learning outcomes and the revised AA curriculum. Those documents were subject to consultation at the end of 2021 and have now been published, so that they can be implemented by September 2023.

Higher education institutes (HEIs) may also use this document in conjunction with the AA curriculum to inform the design of their AA course. The curriculum sets out the high-level outcomes we expect newly qualified AAs to be able to demonstrate, and this content map sets out the specific areas we expect to be assessed, either in the AARA itself or more broadly within the AA course.

Format of assessment

The proposed format of the assessment is an applied knowledge test and WPBA. The knowledge test will draw from most, if not all, of the content map whereas the WPBAs are likely to target a limited range of safety-critical skills. AA courses are expected to prepare students to be assessed across all the topics included in the map.

It is thought that WPBA offers greater authenticity and opportunity for detailed assessment as AAs spend the majority of their time in the workplace, with extensive clinical exposure and access to patients. Anaesthesia is difficult to authentically simulate in an OSCE, especially with low numbers and limited funding. The GMC will set the standards that need to be reached and provide guidance and standards for employers as to how they make the assessment.

Overarching principles

It is expected that the assessment should cover a range of **ages, gender**, **protected characteristics** and **social demographics** to reflect the population. This is true for both the written knowledge test but also crucially the clinical assessment. Scenarios using images, mannequins and simulated patients must also be reflective of this. The protected characteristics are:

- age
- gender reassignment
- being married or in a civil partnership
- being pregnant or on maternity leave
- disability
- race including colour, nationality, ethnic or national origin
- religion or belief
- sex.

As new and emerging issues develop the examiners may incorporate these within the exam in line with the needs of patient safety. The content map should be considered a guide, but is not exhaustive, and the exam board may include other content at their discretion where they consider it appropriate to do so.

Structure of the content map

The anaesthesia associate registration assessment (AARA) content map is structured as follows:

- Domain 1: Professional values and behaviours
- Domain 2: Professional knowledge and skills
- Domain 3: Clinical biomedical sciences
- Domain 4: Clinical practices
- Domain 5: Practical procedures.

And each domain is split into high-level learning outcomes and the capability that AA graduates need to demonstrate. Against each of the capabilities throughout the document, we've indicated the level of knowledge required by AA graduates for this capability. This is denoted throughout the document in tables showing the "Knowledge level required" columns. The columns are:

- Comprehensive understanding and related skills
- Broad understanding and related skills

- Basic understanding.

Domain 1: Professional values and behaviours

This domain refers to the values and behaviours (ethical and professional principles) expected of an anaesthesia associate practicing in the UK.

High level learning outcome	Capability	Knowledge level required		
		Comp	Broad	Basic
Personal conduct	Demonstrates openness and honesty in their interactions with patients, their families and carers, colleagues, and their employers including honesty if things go wrong – known as the 'professional duty of candour'.	✓		
	Recognises the potential impact of their attitudes, values, beliefs, perceptions and personal biases (which may be unconscious) on individuals and groups and identifies personal strategies to address this.	✓		
	Demonstrates awareness of the importance of their personal physical and mental wellbeing, including management of the personal and emotional challenges of coping with uncertainty and change, awareness of fatigue and its impact on care. Utilises appropriate coping strategies such as reflection and debriefing and seeks appropriate advice and support to maintain their own physical and mental health.	✓		
	Understands the roles of diverse staff in anaesthetic and operating theatre teams, the role of an AA in this context, and how this is communicated to patients and the wider team.	✓		
	Demonstrates insight by recognising and acknowledging their own personal and professional limits, taking personal and professional responsibility for their actions. Understands the principles of when and whom to ask for help and seeks help from colleagues and supervisors when necessary.	✓		
Leadership and teamworking	Learns and works effectively as a team member as part of a multi-professional and multi-disciplinary team and across multiple care settings.	✓		
	Works collaboratively with their named supervising doctor, including informing them about any concerns, issues or questions raised as part of managing their patients' care.	✓		

	Provides, accepts and acts on constructive and appropriately framed feedback, including outcomes of appraisals, performance reviews and assessments.	✓		
	Demonstrates they work effectively and in a timely manner with colleagues in ways that best serve the interests of patients.	✓		
	Demonstrates appropriate clinical leadership behaviours and awareness of the dynamics and skills inherent in successful teams.		✓	
	Recognises their role in contributing to the management and leadership of the health service.			✓
Patient-centred care	Demonstrates they are able to work in partnership with patients, and where appropriate, their relatives, carers or other advocates.		✓	
	Understands the principles and values of integrated care, appreciating the importance of the links between pathophysiological, psychological, spiritual, religious, social and cultural factors for each individual. Demonstrates holistic care with patients' needs and safety at the heart of the care process.	✓		
	Demonstrates the ability to take account of patients' concerns, beliefs, choices and preferences, and respect the rights of patients to reach decisions with their health and social care teams about their treatment and care, as well as to refuse or limit treatment.	✓		
	Demonstrates the ability to appropriately advise patients on preventative measures with reference to local and national guidelines, and support patients in caring for themselves to empower them to improve and maintain their health.		✓	
Lifelong learning and teaching	Recognises and uses strategies to learn and work effectively, including use of reflection on their own clinical practice to foster insight and gain meaningful learning from experiences.		✓	
	Demonstrates commitment to professional development and lifelong learning and holds awareness that high quality patient care is the primary role of clinical education.		✓	
	Actively contributes to departmental education activities, including induction and orientation of new staff.			✓

Domain 2: Professional knowledge and skills

This domain sets out the fundamental capabilities required by an AA as part of professional medical practice including the skills needed to provide good clinical care.

High level learning outcome	Capability	Knowledge level required		
		Comp	Broad	Basic
Patient safety	Demonstrates understanding of how errors or risks may occur in clinical practice, including human factors, and the value of research and legislation in preventing harms. Acts to promote safety through identification and mitigation of these dangers, understanding of the importance of learning from their own and others' errors to promote a culture of safety.	✓		
	Demonstrates understanding of the importance of infection control, including the rationale behind decontamination, disinfection and sterilisation, precautions taken with infectious patients and use of aseptic technique.	✓		
	Demonstrates practice that ensures personal safety at work, adhering to correct use of protective equipment, safety in movement and positioning of patients, and in disposal of syringes and sharps.	✓		
Legal frameworks of practice	Demonstrates understanding of the principles of capacity and informed consent, and ability to assess mental capacity following associated legal and professional principles according to local context. Recognises situations in which mental capacity is impaired in short or long-term, the importance of safeguarding vulnerable people and when and how to take action to address vulnerable patients' needs.		✓	
	Respects the dignity and privacy of patients, ensures maintenance of patient confidentiality, and complies with relevant legislation with regards information governance, data protection and data storage.	✓		
	Demonstrates understanding of the principles of legal frameworks in the local context of healthcare, including equality and diversity legislation. Holds awareness of where further information on relevant legislation may be found.			✓
Research, audit and quality improvement	Describes the principles and methods of quality improvement activity, the value of national surveys and audits for measuring the quality of care, and in which contexts these approaches should be used to maintain and improve quality and prioritise use of resources. Understands and applies quality improvement methodology. Understands the importance of evidence medical based practice. Holds a basic understanding of key descriptive, deductive and inferential statistics to facilitate evidence based medical practice. Improves the quality and safety of patient care.		✓	

	Recognises the importance of critical incident reporting in improving patient safety and recognises individual responsibility to report and support investigations.		✓	
Communication skills	Demonstrates effective and empathetic communication with patients, their relatives, carers or other advocates, and with colleagues and members of the multidisciplinary team with whom they work, adapting communication approaches if needed.	✓		
	Engages in appropriate, structured, timely handovers to ensure safe continuing care of patients.	✓		
	Ensures documentation is accurate, timely, comprehensive and clear. Understands the anaesthetic chart and importance of accurate record of anaesthetic practice.	✓		
Health promotion	Recognises the impacts of socio-economic, environmental and lifestyle factors on health and illness, and the importance of empowering patients to improve and maintain health throughout the lifespan. Acts as an advocate for health promotion in the perioperative period.		✓	
Healthcare structure and services	Demonstrates understanding of the cost implications of treatments in terms of finances, equipment and human resources, and need to ensure effective and sustainable clinical practice. Recognises the environmental impacts of healthcare and acts to minimise wasteful use of resources. Demonstrates understanding of the role of AAs within wider healthcare structures, including how services are commissioned across the four nations of the UK. Appreciates the structure of the NHS, including primary care services, and the organisation of anaesthetic services within healthcare structures. Understands and engages with local processes required for the delivery of perioperative and anaesthetic services.			✓

Domain 3: Clinical biomedical sciences

This domain refers to the areas of science underpinning clinical knowledge and includes areas such as anatomy, biochemistry and physiology, physics and pharmacology.

High level learning outcome	Capability	Sub-capability	Knowledge level required		
			Comp	Broad	Basic
Anatomy	Cardiovascular system	Heart & Major Vessels	✓		
		Conduction system	✓		
		Peripheral circulation	✓		
	Neuro	Brain & spinal cord	✓		
		Conduction system (macro / micro)	✓		
		Peripheral nervous system	✓		
	Respiratory	Upper Airway	✓		
		Lungs	✓		
		Thorax	✓		
	Musculoskeletal	Muscle (macro / micro)		✓	
		Nerve (macro / micro)	✓		
		Gross musculo-skeletal system		✓	
	Gastrointestinal	Gastrointestinal anatomy			✓
		Hepato-biliary system - pancreatic			✓
	Renal	Kidney		✓	
		Urinary tract		✓	
	Endocrine	Thyroid / Parathyroid			✓
		Hypothalamic / Pituitary axis			✓
		Adrenals			✓
Biochemistry and physiology	Cardiovascular system	Cardiac cycle (Pressure / Flow)	✓		
		Electrophysiology		✓	
		Control of peripheral circulation	✓		
		Special circulations (coronary / pulmonary / portal / renal)		✓	
		Special circulations (obstetric / foetal)			✓
	Neuro	Cerebral blood flow / Cerebrospinal fluid / Intercranial pressure	✓		
		Autonomic	✓		
		Neuromuscular junction / Nerve transmission conduction	✓		

	Respiratory	Gas exchange (CO2 and O2)	✓		
		Oxygen transport	✓		
		Mechanics/Control of ventilation	✓		
	Musculoskeletal	Striate/Smooth/Cardiac muscle contraction & excitation pathways		✓	
	Gastrointestinal	Upper gastrointestinal		✓	
		Nutritional physiology			✓
		Hepato - Pancreato - Biliary function		✓	
	Renal	Urine production	✓		
		Homeostatic mechanisms	✓		
	Endocrine	Hypothalamic / Pituitary axis		✓	
		Thyroid / Parathyroid		✓	
		Glucose control	✓		
		Renin Angiotensin System		✓	
		Calcium Control			✓
	Metabolism and temperature control	Temperature control and the effects of anaesthesia and surgery	✓		
		Metabolic pathways and energy production		✓	
	Special populations	Understanding of the risks associated with pregnancy and anaesthesia			✓
		Understanding of the additional risks associated with acute patients (trauma, major trauma, emergency/Confidential enquiries into perioperative deaths (CEPOD))		✓	
Equipment, physics and clinical measurement	Anaesthetic machines and breathing equipment	Anaesthetic machines	✓		
		Gas Delivery	✓		
		Vapourisers	✓		
		Scavenging	✓		
		Types of breathing systems	✓		
		Common airway devices	✓		
		Ventilators	✓		
		Suction	✓		
	Anaesthetic equipment	Vascular access devices	✓		
		Laryngoscopes (Airway management)	✓		
		Local and regional anaesthesia	✓		

		Infusion pumps & syringe drivers	✓		
	Other equipment	Electrosurgery		✓	
		Operating tables		✓	
		Temperature control	✓		
		Tourniquets		✓	
		Lasers			✓
		X-rays			✓
		Defibrillator	✓		
		CO2 insufflation		✓	
		Surgical suction			✓
		Disinfection and sterilisation		✓	
		Ultrasound		✓	
	Monitoring	Pulse oximetry	✓		
		Capnography	✓		
		Electrocardiogram (ECG)	✓		
		Blood Pressures	✓		
		Depth of anaesthesia monitoring	✓		
		Neuromuscular block monitoring	✓		
		Airway pressure and flows	✓		
		Anaesthetic agent monitoring	✓		
		Temperature	✓		
		Blood glucose	✓		
		Blood gases - measurement and interpretation	✓		
		Electronic data capture		✓	
		Minimal monitoring standards	✓		
	Physics relevant to anaesthesia	Gas laws		✓	
		SI units		✓	
		Electricity		✓	
		Temperature		✓	
		Flow and pressure		✓	
Pharmacology and prescribing	Pharmacokinetics & pharmacodynamics	Administration	✓		
		Excretion		✓	
		Modelling		✓	
	Pharmacotherapy	Premedication	✓		
		Induction Agents	✓		
		Inhalational Agents	✓		
		Muscle relaxants	✓		

		Local anaesthetics	✓		
		Analgesia	✓		
		Sedation	✓		
		Anticholinergic	✓		
		Antiemetics	✓		
		Antibiotics		✓	
		Resuscitation	✓		
		Cardiovascular	✓		
		Haematology		✓	
		Venous thromboembolism prophylaxis	✓		
		Respiratory	✓		
		Neuro		✓	
		Gastrointestinal		✓	
		Renal & Fluid Balance	✓		
		Endocrine		✓	
		Diabetes	✓		
		Clotting and Platelets		✓	
		Pharmacological Complications & Toxicity / Poisoning		✓	
	Prescribing	Legal aspects, including types of prescribing and controlled drugs	✓		
		Prescribing Errors	✓		
		Electronic Prescribing		✓	
		Prescribing medicines safely (links to Domain 4)	✓		
		Awareness of MHRA yellow card system and alerts		✓	

Domain 4: Clinical practices

This domain sets out the clinical capabilities required to provide good clinical practice.

High level learning outcome	Capability	Sub-capability	Knowledge level required		
			Comp	Broad	Basic
Perioperative care	Preoperative assessment	History, consent, shared decision making	✓		
		Airway assessment	✓		
		Examination relevant to anaesthetic practice	✓		
		Recognition of comorbidity and investigations and optimisation	✓		
		Planning of anaesthetic care and enhanced recovery after surgery (ERAS)	✓		
	Post-operative assessment	Transfusion principles	✓		
		Planning of post-anaesthetic care	✓		
		Management of acute pain	✓		
		Impact of chronic pain		✓	
		Recognition and initial management of common postoperative anaesthesia and surgical complications	✓		
General anaesthesia	Standard WHO Checklist		✓		
	Care of the anaesthetised patient (moving and handling, safe patient positioning, pressure points, dignity)		✓		
	Equipment and monitoring to recognised standards		✓		
	Performs safe induction of anaesthesia	Intravenous	✓		
		Airway management including awareness of the management of the difficult airway	✓		
		Indications for and performance of rapid sequence induction	✓		
	Maintenance of anaesthesia and responds to patient / surgical variables		✓		
	Able to assess, plan for and manage non-complex adult emergency cases and assist in more complicated cases		✓		
	Safe management of Emergence and ongoing care		✓		
	Equivalency to Advanced Life Support		✓		

Resuscitation and transfer	Recognition of the deteriorating patient and responds appropriately		✓		
	Awareness of end-of-life care pathways				✓
	Awareness of advanced directives				✓
	Management of life-threatening emergencies		✓		
Procedural Sedation	Provides safe and effective sedation to appropriate adult patients within the theatre complex	Chooses appropriate sedative drugs	✓		
		Recognition and initial management of complications of sedation	✓		
		Understands different levels of sedation and associated risks	✓		
		Knowledge of reversal agents	✓		
	Understands the particular risks of sedation delivery and the continuum through sedation to anaesthesia		✓		
	Monitoring of a sedated patient's physiology to recognised standards		✓		
	Ensures the provision of safe post-procedural care		✓		
Regional anaesthesia	Performs safe and effective simple peripheral nerve blocks and spinal anaesthesia	Appropriately consents patients for regional anaesthesia	✓		
		Takes appropriate precautions to avoid wrong-site blocks	✓		
		Understands the principles of neuraxial anaesthesia and can describe the management of immediate complications	✓		
		Identifies and describes the initial management of complications of regional anaesthesia including systemic local anaesthetic toxicity	✓		
		Assessment of the adequacy relating to neuraxial and peripheral regional anaesthesia	✓		
		Performs simple peripheral nerves blocks with ultrasound under direct supervision		✓	
		Understands the principles of nerve stimulation usage		✓	
	Understands the principles of epidural anaesthesia and other commonly performed nerve blocks			✓	
	Discusses drugs, equipment and monitoring used in regional anaesthesia		✓		

	Understands the principles of using regional as an adjunct to sedation or general anaesthesia		✓	
Pain management	Assessment and management of acute pain	✓		
	Principles of safe analgesic prescribing and de-prescribing		✓	
	Biopsychosocial aspects of pain			✓
Anaesthetic implications of special populations	Frailty		✓	
	Age		✓	
	Obesity	✓		
	The pregnant patient			✓

Domain 5: Practical procedures

There are a number of procedural skills in which an Anaesthesia Associate student must become proficient to the level expected by the end of training. They must be able to outline the indications for these procedures and recognise the importance of valid informed consent, and of requesting help when appropriate. For all practical procedures the Anaesthesia Associate student must be able to recognise complications and respond appropriately if they arise, including calling for help from colleagues in other specialties when necessary.

All newly qualified AAs should be competent to perform these procedures in adult patients.

Category	Procedure
Capable of performing	Insertion of supraglottic airway
	Intubation using standard laryngoscope
	Intubation using video laryngoscope
	Spinal anaesthesia
	Simple peripheral nerve block
	Peripheral venous cannulation
	Urinary catheterisation
	Ultrasound guided peripheral venous cannulation
Trained in simulated environment	Emergency front of neck airway access
	Needle thoracocentesis
	Nasogastric tube insertion
Understands how to perform procedure and can assist senior	Arterial line
	Central venous line insertion
	Chest drain insertion