

Cambridge University Press & Assessment
978-1-108-70254-6 — Surgical Critical Care
Mazyar Kanani, Simon Lammy
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It is an unusually proud moment to be asked to provide an endorsement for a book co-authored by one of your former students. This book is clear, accessible and easy to read. It provides an excellent aide memoire to support surgical trainees in their examination preparation. Medical students will also find it helpful in their OSCE revision. The focus on up-to-date guidelines and standards provides a guide for what trainees need to know, and where to get the latest updates. The question and answer style will help aspiring candidates to order their thoughts in stressful circumstances, in clinical practice and in exams. As a physician myself, it is encouraging to see a focus on the medical management of surgical patients.

Professor Dame Jane Dacre, Professor of Medical
Education at UCL Medical School and Chair of
the Senior Physicians Society (SPS)

This text is aimed at surgical trainees preparing for the MRCS Part B OSCE but it would also be of great value for final year medical students. It covers all the key clinical challenges associated with surgical critical care, which is a rapidly developing and complex clinical field which requires core knowledge for all ITU users including surgeons in all specialities. The format is concise with clearly presented and well referenced text provided in bullet point format. Tables and illustrations are kept to a minimum but, when used, are relevant and succinct. Those wishing more depth are provided with a few key references. This structure is perfect for those wishing to get a detailed overview of a subject without unnecessary padding and will be greatly appreciated particularly by those preparing for examinations which include aspects of critical care, including the MRCS.

The authors clearly have insight from the perspective of individuals preparing for an exam and those used to examining, and have made an excellent job of updating a text in a rapidly developing field. This textbook has been a key information source for the last 10 years and this update will ensure its continued relevance to surgical trainees. I recommend it strongly.

Brian R Davidson, Professor of Surgery, Royal
Free Hospital NHS Foundation Trust
and UCL, London, UK

Surgical Critical Care

For the MRCS OSCE

Third Edition

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For my brother Kamyar

Mazyar Kanani

For my fiancée Fiona, my mum Joanne, my father
Victor and my brother James

Simon Lammy

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ABBREVIATIONS

AAA	Abdominal aortic aneurysm
ABCDE	Airway, breathing, circulation, disability, exposure
ABG	Arterial blood gas
ABPA	Allergic bronchopulmonary aspergillosis
ACA	Anterior cerebral artery
ACTH	Adrenocorticotrophic hormone
ADH	Antidiuretic hormone
ADP	Adenosine diphosphate
AF	Atrial fibrillation
AIDS	Acquired immunodeficiency syndrome
AKI	Acute kidney injury
ALI	Acute lung injury
ALS	Advanced life support
AMP	Adenosine monophosphate
APTT	Activated partial thromboplastin time
APTT _r	Activated partial thromboplastin time ratio
ARDS	Acute respiratory distress syndrome
ASA	American Society of Anesthesiologists
ATD	Adult therapeutic dose

ATLS®	Advance Trauma Life Support®
ATN	Acute tubular necrosis
ATPase	Adenosine triphosphate
AV	Atrioventricular
a-vO ₂	Arteriovenous oxygen difference
AVRT	Atrioventricular re-entrant tachycardia
BAL	Bronchoalveolar lavage
BBB	Blood-brain barrier
BM	<i>Boehringer Mannheim</i>
BMI	Body mass index
BP	Blood pressure
2,3-BPG	2,3-bisphosphoglycerate
BSA	Body surface area
BTS	British Thoracic Society
cAMP	Cyclic adenosine monophosphate
CAVH	Continuous arteriovenous haemofiltration
CAVHD	Continuous arteriovenous haemodialysis
CAVHDF	Continuous arteriovenous or haemodiafiltration
CCrISP®	Care of the Critically Ill Surgical Patient®
CCU	Coronary care unit
cGMP	Cyclic guanosine monophosphate
CI	Cardiac index
CK	Creatinine kinase
CKD	Chronic kidney disease
CMV	Cytomegalovirus
CO	Cardiac output/carbon monoxide
CO ₂	Carbon dioxide
COAD	Chronic obstructive airway disease

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COPD	Chronic obstructive pulmonary disease
COX	Cyclooxygenase
CPAP	Continuous positive airway pressure
CPP	Cerebral perfusion pressure
CPR	Cardiopulmonary resuscitation
CRT	Capillary refill time
CSF	Cerebrospinal fluid
CT	Computed tomography
CTPA	Computed tomography pulmonary angiography
CUS	Compression ultrasonography
CVC	Central venous catheter
CVOs	Circumventricular organs
CVP	Central venous pressure
CVVH	Continuous venovenous haemofiltration
CVVHD	Continuous venovenous haemodialysis
CVVHDF	Continuous venovenous haemodiafiltration
CXR	Chest radiograph
dAg	Direct antiglobulin test
DBD	Donation after brainstem death
DCD	Donation after circulatory death
DHTR	Delayed haemolytic transfusion reaction
DI	Diabetes insipidus
DIC	Disseminated intravascular coagulation
DKA	Diabetic ketoacidosis
<i>DLco</i>	Transfer factor
DP	Diastolic pressure
DPL	Diagnostic peritoneal lavage
DSA	Digital subtraction angiography

DVT	Deep venous thrombosis
ECF	Extracellular fluid
ECG	Electrocardiogram
ECMO	Extracorporeal membrane oxygenation
EDH	Extradural haematoma
EDRF	Endothelium-derived relaxing factor
EEG	Electroencephalogram
EF	Ejection fraction
eGFR	Estimated glomerular filtration rate
ELISA	Enzyme-linked immunosorbent assay
ENT	Ear, nose and throat
ERV	Expiratory reserve volume
ESR	Erythrocyte sedimentation rate
ESRF	End-stage renal failure
EVD	External ventricular drain
EWS	Early warning score
FAST	Focused assessment with sonography in trauma
FBC	Full blood count
FEV ₁	Forced expiratory volume in 1 second
FFA	Free fatty acids
FFP	Fresh frozen plasma
FiO ₂	Fraction of inspired oxygen
FNHTR	Febrile non-haemolytic transfusion reaction
FRC	Functional residual capacity
FVC	Forced vital capacity
GBS	Guillan-Barré syndrome
GCS	Glasgow Coma Scale
GFR	Glomerular filtration rate
GI	Gastrointestinal

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GMC	General Medical Council
HAS	Human albumin solution
HBV	Hepatitis B virus
Hct	Haematocrit
HCV	Hepatitis C virus
HDU	High dependency unit
HITS	Heparin-induced thrombocytopaenia syndrome
HIV	Human immunodeficiency virus
HLA	Human leucocyte antigen
HPA	Human platelet antigen
HR	Heart rate
HRT	Hormone replacement therapy
HTLV	Human T-cell lymphocyte virus
I:E	Inspiratory:expiratory ratio
IABP	Intra-arterial blood pressure
IC	Inspiratory capacity
ICG	Indocyanine green
ICH	Intracerebral haemorrhage
ICP	Intracranial pressure
ICU	Intensive care unit
Ig	Immunoglobulin
IHD	Ischaemic heart disease
IIH	Idiopathic intracranial hypertension
IL	Interleukin
IM	Intramuscular
IMV	Intermittent mandatory ventilation
IN	Intranasal
INH	Inhalation

INR	International normalised ratio
IO	Intraosseus
IPPV	Intermittent positive pressure ventilation
IRV	Inspiratory reserve volume
IT	Intrathecal
IV	Intravenous
JPAC	Joint professional advisory committee
JVP	Jugular venous pulse/pressure
Kco	Transfer coefficient
KDIGO	Kidney Disease Improving Global Outcomes
LA	Local anaesthetic
LBBS	Left bundle branch block
LDH	Lactate dehydrogenase
LED	Light-emitting diode
LFTs	Liver function tests
LMWH	Low molecular weight heparin
LP	Lumbar puncture
LVEDV	Left ventricular end-diastolic volume
MAHA	Microangiopathic haemolytic anaemia
MAP	Mean arterial pressure
MI	Myocardial infarction
MND	Motor neurone disease
MODS	Multi-organ dysfunction syndrome
MPAP	Mean pulmonary artery pressure
MRI	Magnetic resonance imaging
MRSA	Methicillin-resistant <i>Staphylococcus aureus</i>
NAIT	Neonatal alloimmune thrombocytopenia
NAT	Nucleic acid testing

xviii List of Abbreviations

NICE	National Institute for Health and Care Excellence
NG	Nasogastric
NIBP	Non-invasive blood pressure
NJ	Nasojejunal
NO	Nitric oxide
NSAIDs	Non-steroidal anti-inflammatory drugs
O ₂	Oxygen
OCP	Oral contraceptive pill
PA	Pulmonary artery
PaCO ₂	Partial arterial pressure of carbon dioxide
PACWP	Pulmonary artery capillary wedge pressure
PAF	Platelet-activating factor
PAFC	Pulmonary artery flotation catheter
PaO ₂	Arterial partial pressure of oxygen
PAS	Platelet additive solution
PCA	Patient-controlled analgesia
PCC	Prothrombin complex concentrate
PCI	Percutaneous coronary intervention
PE	Pulmonary embolus
PEA	Pulseless electrical activity
PEEP	Positive end-expiratory pressure
PEFR	Peak expiratory flow rate
PEG	Percutaneous endoscopic gastrostomy
PET	Positron emission tomography
PFO	Patent foramen ovale
PFTs	Pulmonary function tests
PG	Prostaglandin
PICC	Peripherally inserted central catheter

PO	Per oral
PP	Pulse pressure
PPIs	Proton pump inhibitors
PR	Per rectum
PSV	Pressure support ventilation
PT	Prothrombin time
PTH	Parathyroid hormone
PTHrP	Parathyroid hormone related peptide
PTP	Post-transfusion purpuric reaction
PVR	Pulmonary vascular resistance
qSOFA	Quick Sequential Organ Failure Assessment
RAA	Renin-angiotensin-aldosterone
rAAA	Ruptured abdominal aortic aneurysm
RASS	Richmond Agitation Sedation Scale
Rh	Rhesus
RIG	Radiologically inserted gastrostomy
RRT	Renal replacement therapies
RSI	Rapid sequence induction
RV	Residual volume
SA	Sinoatrial node
SAH	Subarachnoid haemorrhage
SAG-M	Saline, adenine, glucose and mannitol
SaO ₂	Arterial oxygen saturation
SC	Subcutaneous
SDH	Subdural haematoma
SD-FFP	Solvent detergent fresh frozen plasma
SEWS	Scottish Early Warning Score
SIADH	Syndrome of inappropriate ADH secretion
SIGN	Scottish Intercollegiate Guidelines Network

xx List of Abbreviations

SIMV	Synchronised intermittent mandatory ventilation
SIRS	Systemic inflammatory response syndrome
SLE	Systemic lupus erythematosus
SOFA	Sequential Organ Failure Assessment
SP	Systolic pressure
SPECT	Single photon emission computed tomography
STEMI	ST-segment elevated myocardial infarction
SV	Stroke volume
SVC	Superior vena cava
SvO ₂	Mixed venous oxygen saturation
SVR	Systemic vascular resistance
SVT	Supraventricular tachycardia
TACO	Transfusion-associated circulatory overload
TA-GvHD	Transfusion-associated graft vs. host disease
TB	Tuberculosis
TC	Transcutaneous
TCD	Transcranial Doppler
TEDS	Thromboembolic deterrent stockings
TEE	Transthoracic and transoesophageal echocardiography
TLC	Total lung capacity
TLV	Total lung volume
TNF	Tumour necrosis factor
TOE	Transoesophageal echocardiography
TPN	Total parenteral nutrition
TRALI	Transfusion-related acute lung injury
TT	Thrombin time
TTE	Transthoracic echocardiography

TURP	Transurethral resection of the prostate
TV	Tidal volume
U&Es	Urea & electrolytes
US	Ultrasound
V/Q	Ventilation/perfusion ratio
VA	Alveolar ventilation
VAD	Ventricular assist device
VAP	Ventilator-associated pneumonia
VATS	Video-assisted thoracoscopic surgery
VBG	Venous blood gas
VC	Vital capacity
vCJD	Variant Creutzfeldt-Jakob disease
VKA	Vitamin K antagonist
VP	Ventriculoperitoneal
VSD	Ventricular septal defect
VT	Ventricular tachycardia
vWF	von Willebrand’s factor
WHO	World Health Organization
WPW	Wolff-Parkinson-White