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Edited by Jonathan Bengler, Jerry Nolan and Mike Clancy

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Edited by

Jonathan Benger

United Bristol Healthcare Trust, UK

Jerry Nolan

Royal United Hospital, Bath, UK

and

Mike Clancy

Southampton General Hospital, UK



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Contributors

Jonathan Bengner

Consultant in Emergency Medicine, United Bristol Healthcare Trust. Professor of Emergency Care, University of the West of England, UK.

Stephen Bush

Consultant in Emergency Medicine, St. James's University Hospital, Leeds, UK.

Mike Clancy

Consultant in Emergency Medicine, Southampton General Hospital, Southampton, UK.

Andy Eynon

Consultant in Intensive Care, Wessex Neurological Centre, Southampton General Hospital, Southampton, UK.

Colin Graham

Professor in Emergency Medicine, Accident and Emergency Medicine Academic Unit, Chinese University of Hong Kong.

Alasdair Gray

Consultant and Honorary Reader in Emergency Medicine, Royal Infirmary of Edinburgh, UK.

Carl Gwinnutt

Consultant in Anaesthesia, Salford Royal Foundation Trust, Salford, UK.

Simon Leigh-Smith

Consultant in Emergency Medicine, Defence Medical Services, UK.

David Lockey

Consultant in Anaesthesia and Intensive Care, Frenchay Hospital, Bristol, UK.

Nikki Maran

Consultant in Anaesthesia, Royal Infirmary of Edinburgh, UK.

Dermot McKeown

Consultant in Anaesthesia and Intensive Care, Royal Infirmary of Edinburgh, UK.

Patrick Nee

Consultant in Emergency Medicine and Intensive Care, Whiston Hospital, Merseyside, UK.

Neil Nichol

Consultant in Emergency Medicine, Ninewells Hospital, Dundee, UK.

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List of contributors

Jerry Nolan

Consultant in Anaesthesia and Intensive Care, Royal United Hospital, Bath, UK.

Tim Parke

Consultant in Emergency Medicine, Southern General Hospital, Glasgow, UK.

David Ray

Consultant in Anaesthesia and Intensive Care, Royal Infirmary of Edinburgh, UK.

Neil Robinson

Consultant in Emergency Medicine, Salisbury District Hospital, Salisbury, UK.

Patricia Weir

Consultant in Paediatric Anaesthesia and Intensive Care, Bristol Royal Hospital for Children, Bristol, UK.

Dominic Williamson

Consultant in Emergency Medicine, Royal United Hospital, Bath, UK.

Paul Younge

Consultant in Emergency Medicine, Frenchay Hospital, Bristol, UK.

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Foreword

This book and the course for which it is the manual are very important developments in acute patient care. Compromise of the airway or ventilation is the most urgent of all emergencies, requiring a prompt and skilled response. Being able to recognize such compromise, knowing how and when to intervene and possessing the expertise safely to do so, form a potentially life-saving combination.

Fully trained anaesthetists possess this combination, but patients with airway or ventilation problems are frequently seen by doctors who are not trained anaesthetists. It is imperative that these doctors can recognize the problem and initiate an appropriate and safe response. This book and its accompanying course are therefore designed principally for anaesthetists in the early stages of their training, and for emergency and acute physicians.

Neither this book nor the accompanying course can, by themselves, impart sufficient knowledge and skills for participants to safely manage all aspects of airway care. Both the book and the course are at pains to emphasize this. Instead they emphasize a structured approach to the problems of establishing, managing and stabilizing the airway, an excellent decision-making process, and an introduction to basic and more advanced skills in the management of the airway and ventilation. Specific chapters address key issues such as airway assessment, oxygen therapy, basic airway management techniques and indications for intubation. Rapid sequence induction, how to deal with difficult or failed intubation and post-intubation management during transfer are also all discussed in detail. In particular, the book emphasizes a team response to this most pressing of emergencies so as to ensure a safe approach, informed decision-making and the application of skills up to the limit of the practitioner's competence.

The book and the course are most appropriate for doctors in the early years of anaesthetic training or those undertaking the acute care common stem programme, but will also be of use to more senior doctors involved in acute care.

Professor Alastair McGowan OBE

Dean of Postgraduate Medicine, West of Scotland Deanery

Immediate Past President, College of Emergency medicine

Sir Peter Simpson

Immediate Past-President, Royal College of Anaesthetists

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Abbreviations

ABCD	Airway, breathing, circulation and disability
ABG	Arterial blood gas
APL	Adjustable pressure limiting (valve)
APLS	Advanced paediatric life support
ARDS	Acute respiratory distress syndrome
ATLS	Advanced trauma life support
BiPAP	Bi-level positive airway pressure
BURP	Backwards, upwards, rightwards pressure
CICV	Can't intubate, can't ventilate
CMRO ₂	Cerebral metabolic rate for oxygen
CMV	Controlled mandatory ventilation
CO ₂	Carbon dioxide
COPD	Chronic obstructive pulmonary disease
CPAP	Continuous positive airway pressure
CPP	Cerebral perfusion pressure
CSI	Cervical spine injury
CT	Computed tomography
CVP	Central venous pressure
CXR	Chest X-ray
ECG	Electrocardiogram
ED	Emergency department
EEG	Electroencephalogram
ENT	Ear, nose and throat
EPAP	Expiratory positive airway pressure
ETCO ₂	End tidal carbon dioxide
FAO ₂	Fractional alveolar oxygen concentration
FG	French gauge
FGF	Fresh gas flow
FiO ₂	Inspired oxygen concentration
FRC	Functional residual capacity
GABA	Gamma-amino butyric acid
GCS	Glasgow Coma Scale
GI	Gastro-intestinal
HAFOE	High-airflow oxygen enrichment
HME	Heat and moisture exchanger
ICNARC	Intensive Care National Audit And Research Centre

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ICP	Intracranial pressure
ICU	Intensive care unit
I:E	Inspiratory–expiratory ratio
ILMA	Intubating laryngeal mask airway
IM	Intramuscular
IOP	Intraocular pressure
IPAP	Inspiratory positive airway pressure
IPPV	Intermittent positive pressure ventilation
IV	Intravenous
LED	Light-emitting diode
LMA	Laryngeal mask airway
MAP	Mean arterial pressure
MC	Mary Caterall
MET	Medical emergency team
MH	Malignant hyperthermia
MMC	Modernising Medical Careers
MMS	Masseter muscle spasm
MV	Minute volume
NEAR	National Emergency Airway Registry
NIBP	Non-invasive blood pressure
NICE	National Institute for Health and Clinical Excellence
NIV	Non-invasive ventilation
NMB	Neuromuscular blocker
NMJ	Neuromuscular junction
O ₂	Oxygen
P _A CO ₂	Partial pressure of carbon dioxide (alveolar)
P _A O ₂	Partial pressure of oxygen (alveolar)
P _a CO ₂	Partial pressure of carbon dioxide (arterial)
P _a O ₂	Partial pressure of oxygen (arterial)
PEEP	Positive end expiratory pressure
PICU	Paediatric intensive care unit
PLMA	ProSeal laryngeal mask airway
P _{max}	Peak (maximum) inspiratory pressure
PO ₂	Partial pressure of oxygen
Q	Perfusion
RR	Respiratory rate
RSI	Rapid sequence induction (of anaesthesia)
SIGN	Scottish Intercollegiate Guidelines Network
SIMV	Synchronized intermittent mandatory ventilation
SpO ₂	Oxygen saturation by pulse oximetry
TBI	Traumatic brain injury

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V	Ventilation
V/Q	Ventilation/perfusion ratio
VALI	Ventilator associated lung injury
V _T	Tidal volume