Emergency Airway Management
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Edited by

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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.

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Immediate Past President, College of Emergency medicine

Sir Peter Simpson
Immediate Past-President, Royal College of Anaesthetists
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABCD</td>
<td>Airway, breathing, circulation and disability</td>
</tr>
<tr>
<td>ABG</td>
<td>Arterial blood gas</td>
</tr>
<tr>
<td>APL</td>
<td>Adjustable pressure limiting (valve)</td>
</tr>
<tr>
<td>APLS</td>
<td>Advanced paediatric life support</td>
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<tr>
<td>ARDS</td>
<td>Acute respiratory distress syndrome</td>
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<tr>
<td>ATLS</td>
<td>Advanced trauma life support</td>
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<tr>
<td>BiPAP</td>
<td>Bi-level positive airway pressure</td>
</tr>
<tr>
<td>BURP</td>
<td>Backwards, upwards, rightwards pressure</td>
</tr>
<tr>
<td>CICV</td>
<td>Can’t intubate, can’t ventilate</td>
</tr>
<tr>
<td>CMRO₂</td>
<td>Cerebral metabolic rate for oxygen</td>
</tr>
<tr>
<td>CMV</td>
<td>Controlled mandatory ventilation</td>
</tr>
<tr>
<td>CO₂</td>
<td>Carbon dioxide</td>
</tr>
<tr>
<td>COPD</td>
<td>Chronic obstructive pulmonary disease</td>
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<tr>
<td>CPAP</td>
<td>Continuous positive airway pressure</td>
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<tr>
<td>CPP</td>
<td>Cerebral perfusion pressure</td>
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<tr>
<td>CSI</td>
<td>Cervical spine injury</td>
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<tr>
<td>CT</td>
<td>Computed tomography</td>
</tr>
<tr>
<td>CVP</td>
<td>Central venous pressure</td>
</tr>
<tr>
<td>CXR</td>
<td>Chest X-ray</td>
</tr>
<tr>
<td>ECG</td>
<td>Electrocardiogram</td>
</tr>
<tr>
<td>ED</td>
<td>Emergency department</td>
</tr>
<tr>
<td>EEG</td>
<td>Electroencephalogram</td>
</tr>
<tr>
<td>ENT</td>
<td>Ear, nose and throat</td>
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<tr>
<td>EPAP</td>
<td>Expiratory positive airway pressure</td>
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<tr>
<td>ETCO₂</td>
<td>End tidal carbon dioxide</td>
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<tr>
<td>FAO₂</td>
<td>Fractional alveolar oxygen concentration</td>
</tr>
<tr>
<td>FG</td>
<td>French gauge</td>
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<tr>
<td>FGF</td>
<td>Fresh gas flow</td>
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<tr>
<td>FiO₂</td>
<td>Inspired oxygen concentration</td>
</tr>
<tr>
<td>FRC</td>
<td>Functional residual capacity</td>
</tr>
<tr>
<td>GABA</td>
<td>Gamma-amino butyric acid</td>
</tr>
<tr>
<td>GCS</td>
<td>Glasgow Coma Scale</td>
</tr>
<tr>
<td>GI</td>
<td>Gastro-intestinal</td>
</tr>
<tr>
<td>HAFOE</td>
<td>High-airflow oxygen enrichment</td>
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<tr>
<td>HME</td>
<td>Heat and moisture exchanger</td>
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<tr>
<td>ICNARC</td>
<td>Intensive Care National Audit And Research Centre</td>
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List of abbreviations

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
O₂  Oxygen
PaCO₂  Partial pressure of carbon dioxide (alveolar)
PaO₂  Partial pressure of oxygen (alveolar)
PaCO₂  Partial pressure of carbon dioxide (arterial)
PaO₂  Partial pressure of oxygen (arterial)
PEEP  Positive end expiratory pressure
PICU  Paediatric intensive care unit
PLMA  ProSeal laryngeal mask airway
Pmax  Peak (maximum) inspiratory pressure
PO₂  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
SpO₂  Oxygen saturation by pulse oximetry
TBI  Traumatic brain injury
List of abbreviations

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<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>V</td>
<td>Ventilation</td>
</tr>
<tr>
<td>V/Q</td>
<td>Ventilation/perfusion ratio</td>
</tr>
<tr>
<td>VALI</td>
<td>Ventilator associated lung injury</td>
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<tr>
<td>VT</td>
<td>Tidal volume</td>
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