

Contents

I	Basic principles	1
1	The aircraft cabin <i>Matthias von Mülmann</i>	3
1.1	Cabin pressurization	3
1.2	Humidity	9
1.3	Temperature	10
1.4	Extraterrestrial radiation	11
1.5	Special exposures	11
1.6	Space and mobility	13
2	Turbulence and vibration <i>Matthias von Mülmann</i>	15
3	Risk of onboard injury <i>Matthias von Mülmann</i>	17
4	Onboard medical equipment <i>Matthias von Mülmann</i>	19
4.1	Emergency medical kits <i>Matthias von Mülmann</i>	20
4.2	Semi-automated external defibrillator (AED) <i>Günther Kaul</i>	29
4.3	Oxygen <i>Günther Kaul</i>	33
4.4	Satellite telephone – Medical hotline <i>Günther Kaul</i>	35
5	Patient transport by commercial aircraft <i>Andreas Gabel</i>	37
6	Regulations regarding the transportation of ill passengers <i>Uwe Stüben</i>	41
6.1	Legal requirements	41
6.2	General guidelines for medical clearance of ill passengers	42
6.3	Medical clearance – General rules of Lufthansa	42
6.4	Disabled passengers and passengers with reduced mobility	43

7	Legal aspects of medical assistance on board commercial aircraft _____	47
	<i>Wolf Müller-Rostin</i>	
7.1	Decision-making authority on board _____	47
7.2	Failure to render assistance on board also punishable by law _____	49
7.3	Liability insurance coverage for the provision of first aid on board _____	50
7.4	Liability of medical volunteers under criminal law _____	51
7.5	Honorarium for doctors _____	52
7.6	Transmission of infectious diseases through aircraft _____	54
7.7	The (growing) role of doctors in aviation litigation _____	55
7.8	The so-called "economy class syndrome" _____	57
II	Preflight advice _____	61
1	Medications, checklists, travel medicine _____	63
	<i>Matthias von Mülmann</i>	
1.1	Preflight checklists _____	64
1.2	Personal travel medications _____	66
2	Time zone changes _____	69
	<i>Matthias von Mülmann</i>	
3	Problems of adjustment to pressure changes (barotrauma) _____	75
	<i>Matthias von Mülmann</i>	
3.1	Ear, nose and throat _____	76
3.2	The lungs _____	79
3.3	Gastrointestinal tract _____	80
4	Traveller's thrombosis _____	81
	<i>Matthias von Mülmann</i>	
5	Medical conditions and flight fitness _____	83
	<i>Matthias von Mülmann</i>	
5.1	Eye disorders _____	84
5.2	Blood disorders _____	86
5.3	Ear, nose and throat disorders _____	88
5.4	Heart and circulatory disorders _____	90
5.5	Infectious diseases _____	98
5.6	Lung diseases _____	102
5.7	Gastrointestinal disorders _____	107
5.8	Neurological disorders _____	107
5.9	Psychiatric disorders _____	108

5.10	Kidney disorders	110
5.11	Metabolic disorders	111
5.12	Surgeries	114
5.13	Dental disorders	117
6	Pregnancy and flight fitness	119
	<i>Matthias von Mülmann</i>	
7	Travelling with children (medical advice)	121
	<i>Matthias von Mülmann</i>	
8	Travelling with toddlers (legal regulations)	123
	<i>Uwe Stüben</i>	
9	Disabled passengers	125
	<i>Günther Kaul and Uwe Stüben</i>	
9.1	The MEDIF/MEDA forms	127
9.2	The Frequent Traveller's Medical Card	130
9.3	Rules for transporting disabled passengers	131
III	Treatment of medical emergencies on board	133
1	Medical diversions	135
	<i>Matthias von Mülmann and Günther Kaul</i>	
2	General considerations regarding medical emergencies	139
	<i>Matthias von Mülmann and Günther Kaul</i>	
2.1	Assistance from flight attendants	139
2.2	Decision-making for cardiopulmonary resuscitation	140
2.3	Diagnostic and therapeutic options	140
2.4	Space limitations	141
2.5	Illumination	141
2.6	Noise	141
3	Motion sickness	143
	<i>Jan Gebhard</i>	
4	Fear of flying	147
	<i>Jan Gebhard</i>	
5	Cardiovascular emergencies on board	151
	<i>Andreas Gabel</i>	
5.1	Circulatory collapse and unconsciousness	151
5.2	Tachycardia	154
5.3	Hypertensive emergencies	157

Contents

5.4	ACS, angina pectoris and myocardial infarction	158
5.5	Pulmonary embolism	160
5.6	Complications of pacemakers and ICDs	162
6	Pulmonary problems	163
	<i>Andreas Gabel</i>	
6.1	Bronchial asthma and asthma attacks	164
6.2	Non-specific breathing problems	167
6.3	Hyperventilation	167
6.4	Pneumothorax	168
7	Unconsciousness/seizures on board	171
	<i>Günther Kaul</i>	
7.1	Stroke/Transient ischaemic attack (TIA)	172
7.2	Hypoglycaemia	173
7.3	Seizures	173
8	Intoxication from alcohol, medications or drugs	175
	<i>Matthias von Müllmann</i>	
9	Food poisoning	177
	<i>Matthias von Müllmann</i>	
10	Choking from foreign body aspiration on board (adults)	179
	<i>Jan Gebhard</i>	
11	Colics	181
	<i>Jan Gebhard</i>	
11.1	Biliary colic	181
11.2	Renal and urinary colic	183
12	Injuries and burns	185
	<i>Matthias von Müllmann</i>	
12.1	Scalding and burns	185
12.2	Injuries	186
13	Problems and emergencies with children	189
	<i>Jan Gebhard</i>	
13.1	Ear, nose, and throat infections in children	189
13.2	Fever and febrile seizures in children	190
13.3	Abdominal pain in children	191
13.4	Choking fits (children)	192

Contents

IV	Cardiopulmonary resuscitation on board	195
1	Who may do what during CPR? _____ <i>Günther Kaul</i>	197
2	Resuscitation – Adults _____ <i>Günther Kaul</i>	199
2.1	Resuscitation procedure _____	200
3	Resuscitation on board – Infants and children _____ <i>Günther Kaul</i>	205
3.1	Resuscitation procedure _____	206
V	Service/Appendix	211
1	Documentation of medical emergencies on board <i>Günther Kaul</i>	213
2	Doctor-On-Board programme _____ <i>Matthias von Mülmann</i>	215
3	Recommended literature _____	217
	Index _____	219