
Chapter 9 Complications

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COMPLICATIONS

Complications are assessed and captured for patients entered in the Major injury category. These may occur in the pre-hospital setting or during the patients stay in hospital. A list of the codes and definition appears in the appendix.

953 (25.1%) of the 3,794 patients admitted to Liverpool Hospital had one or more complications during their episode of care. The following tables represent the number of patients in each broad age category who suffered a complication and the type and description of the types of complication which occurred.

Age Group for Occurrence of Complication

Age Group Complication	0-14		15-54		55-64		65+		Total	
	n	%	n	%	n	%	n	%	n	%
None	384	89.3	1946	75.2	166	65.1	345	66.2	2841	74.9
Occurred	46	10.7	642	24.8	89	34.9	176	33.9	953	25.1
Patients	430	100	2588	100	255	100	521	100	3794	100

Type and Description of Complication for Age Groups

Type	Description	0-14	15-54	55-64	65+	Total
Pre-Hospital	Oesophageal intubation		1			1
	Incomplete case slip	1	4		1	6
	No caseslip	3	32	1	2	38
	Other		2		1	3
	Prehospital delay	1	2			3
	Unable to intubate	1	8	1	1	11
	Unable to start IV	1	6			7
Pre-Hospital Total		7	55	2	5	69
Airway	Esophageal intubation		1		1	2
	Extubation - unintentional	2	1			3
	Mainstem Intubation		4			4
	Other Airway		13	1	2	16
Airway Total		2	19	1	3	25
Cardiovascular	Arrhythmia		2	1	6	9
	Cardiac Arrest	8	24	4	9	45
	Cardiogenic Shock				1	1
	CHF (iatrogenic)		1		1	2
	Myocardial Infarct		1	3	6	10
	Other CVS		2		7	9
	Pericard Effus/Tamp'de		2	1		3
	Pericarditis	1		1		2
Shock		12	3	10	25	
Cardiovascular Total		9	44	13	40	106
Gastrointestinal	Bowel injury (iatrogenic)		1	1		2
	Dehiscence/Evisceration		5			5
	Fistula (not pancreatic)		2	1		3
	Hemorrhage Lower		1		2	3
	Ilius		16	5	6	27
	Other GI		4	3	4	11
	Peritonitis		2	1		3
	Sm Bowel Obstruction		3	1	1	5
	Ulcer- Duodenal/Gastric		1	1	1	3
Gastrointestinal Total			35	13	14	62

Type and Description of Complication for Age Groups (continued)

Type	Description	0-14	15-54	55-64	65+	Total
Haematological	Coagulopathy (intraoperative)		11	1	1	13
	Coagulopathy (other)		9	3	3	15
	DIC		2		1	3
	Other Hematologic		9	2	3	14
	Serum Sodium		2		3	5
	Transfusion Complication		3	1	1	5
Haematologica Total			36	7	12	55
Hepatic, Pancreatic Biliary, Splenic	Acalculous Cholecystitis		2			2
	Hepatitis		1	1	1	3
	Liver Failure		4	1	2	7
	Other Hepatic/Biliary	2	96	12	25	135
Hepatic Total		2	103	14	28	147
Infection	Cellulitis/Traumatic Injury		6	1	6	13
	Fungal Sepsis			1		1
	Intra-abdominal Abscess		7	1	1	9
	Line Infection		9	3	5	17
	Other infection		9	2	2	13
	Sepsis-like syndrome		5	1		6
	Septicaemia		4	5	4	13
	Wound Infection	1	35	5	8	49
	Fungal Infection			1		1
Infeccion Total		1	75	20	26	122
Musculo-skeletal Integumentary	Compartment Synd	1	30	4		35
	Decubitus - blister		4		3	7
	Decubitus - deep		1			1
	Decubitus - minor	1	2			3
	Decubitus - open sore		5	1	2	8
	Loss of Reduction/fix	1	6		2	9
	Nonunion	1	6		2	9
	Orthopedic Wound Inf	1	21	5	9	36
	Osteomyelitis	2	5	1		8
	Other	2	9	2	2	15
Musculoskeletal Total		9	89	13	20	131
Neurological	Alcohol Withdrawal		14	2	3	19
	Anoxic Encephalopathy			1		1
	Brain Death		8			8
	Diabetes Insipidus		4			4
	Meningitis		2			2
	Neuropraxia (iatrogenic)		3			3
	Other Neurological		8	2	5	15
	Progression of original insult	2	12	4	6	24
	Seizure in hospital	3	18	1	3	25
	SIADH		3			3
	Stroke /CVA		5		2	7
Neurological Total		5	77	10	19	111
Other	Anaesthetic complication		3		1	4
	Drugs		9	2	1	12
	Fluids		2	2	1	5
	Hypothermia	3	16	4	3	26
	Other		13	3	8	24
	Return to OT	2	6	1	2	11
	Unexpect postop hemorrhage		4	1	2	7
	Unexpected Readmit	2	21	4	6	33
Other Total		7	74	17	24	122

Type and Description of Complication for Age Groups (continued)

Type	Description	0-14	15-54	55-64	65+	Total
Provider	Delay in Diagnosis	3	48	7	12	70
	Delay in disposition	1	1			2
	Delay in MD response		8	1	1	10
	Delay in TT Activation		5		1	6
	Delay Obtaining consult	1	6	4	2	13
	Delay to OT		9	1		10
	Error in Diagnosis		19	1	2	22
	Error in Judgement	1	13	4	2	20
	Error in Technique	1	4		1	6
	Incomplete Record	1	18	1	3	23
Provider Total		8	131	19	24	182
Psych	Psychiatric		5		3	8
Psychiatric Total			5		3	8
Pulmonary	ARDS	1	11		1	13
	Aspiration/Pneumonia	2	9	1	1	13
	Atelectasis	4	174	28	57	263
	Empyema		3	1	1	5
	Fat Embolus		7		1	8
	Hemothorax		1			1
	Other Pulmonary		9	3	6	18
	Pleural Effusion	3	110	20	35	168
	Pneumonia	2	29	6	16	53
	Pneumothorax (Baro)		1			1
	Pneumothorax (Iatrogenic)	1	7	1		9
	Pneumothorax (Recurrent)		4		1	5
	Pneumothorax (Tension)		3		1	4
	Pulmonary Edema	2	13	2	7	24
	Pulmonary Embolus		8	2	5	15
	Respiratory Failure/Distress	2	19	4	14	39
Upper Airway Obstruction	1	1			2	
Pulmonary Total		18	409	68	146	641
Renal	Other Renal/GU		2	2	2	6
	Renal failure		12	3	13	28
	Ureteral Injury		2			2
	UTI - early		2	2	7	11
	UTI - late	1	23	7	24	55
Renal Total		1	41	14	46	102
Vascular	DVT (lower ext)		9	3	3	15
	Gangrene		1			1
	Other Vascular		1		1	2
	Thrombosis		3		1	4
Vascular Total			14	3	5	22
Grand Total		69	1207	214	415	1905

Possible Association Between Complication Type and Survival Outcome

Type of Complication	Survival		Death		Total	
	N	%	N	%	N	%
Pre-hospital	61	88.4	8	11.6	69	3.6
Airway	23	92	2	8	25	1.3
Cardiovascular	41	38.7	65	61.3	106	5.6
Gastrointestinal	58	93.5	4	6.5	62	3.3
Haematological	38	69.1	17	30.9	55	2.9
Hepatic, Biliary	124	84.4	23	15.6	147	7.7
Infection	114	93.4	8	6.6	122	6.4
Musculoskeletal	127	96.9	4	3.1	131	6.9
Neurological	84	75.7	27	24.3	111	5.8
Other	108	88.5	14	11.5	122	6.4
Provider	164	90.1	18	9.9	182	9.6
Psychiatric	6	75	2	25	8	0.4
Pulmonary	559	87.2	82	12.8	641	33.6
Renal	86	84.3	16	15.7	102	5.4
Vascular	22	100	0	0	22	1.2
Total	1615	84.8	290	15.2	1905	100.0

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