



# Adult Emergency Medicine at a Glance

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## Preface

Emergency Medicine has undergone a quiet revolution over the past twenty years due to a variety of factors that have changed the way medicine is practiced.

- Increasing demand and expectations of medical care.
- Reduction of junior doctors' hours.
- An ageing population.
- Fragmentation of out of hours care.
- Reduced hospital bed-stay.
- Sub-specialisation of inpatient medical and surgical practice.
- Litigation.

These factors have pushed expert decision-making towards the front door of the hospital so that the correct diagnosis and treatment start as soon as possible in the patient's journey. As other specialties have moved away from the acute assessment and treatment of patients, Emergency Medicine has expanded to fill the vacuum left, and in doing so has increased its realm of practice substantially.

Emergency Medicine is exciting and confronting, intimidating and liberating – it is the chance to exercise and hone your diagnostic and practical skills in a well-supervised environment.

Clinical staff who work in the ED have all been through the inevitable feelings of fear, uncertainty and doubt that come with the territory, and want you to experience the enjoyment and satisfaction of working in an area of medicine that is never boring.

When trainees start Emergency Medicine, it is often the first time they have seen patients before any other staff. To use a traditional analogy, they have seen plenty of needles, and may be very good at recognising them, but now they are faced with haystacks, in which may be hidden a variety of sharp shiny objects.

Medical textbooks usually describe topics by *anatomy* or *pathology* (needles), e.g. heart failure, which tends to assume the diagnostic process. In this book we have tried to organise topics by *presentation* (haystacks), e.g. 'short of breath', and have tried to articulate the key features that help us find the needles.

We are both great fans of the '*At a Glance*' series, and have enjoyed the challenge of combining the breadth of practice of adult Emergency Medicine with the concise nature of the '*At a Glance*' format. We hope you enjoy this book and find it useful as you explore this most dynamic area of medicine.

## Acknowledgements

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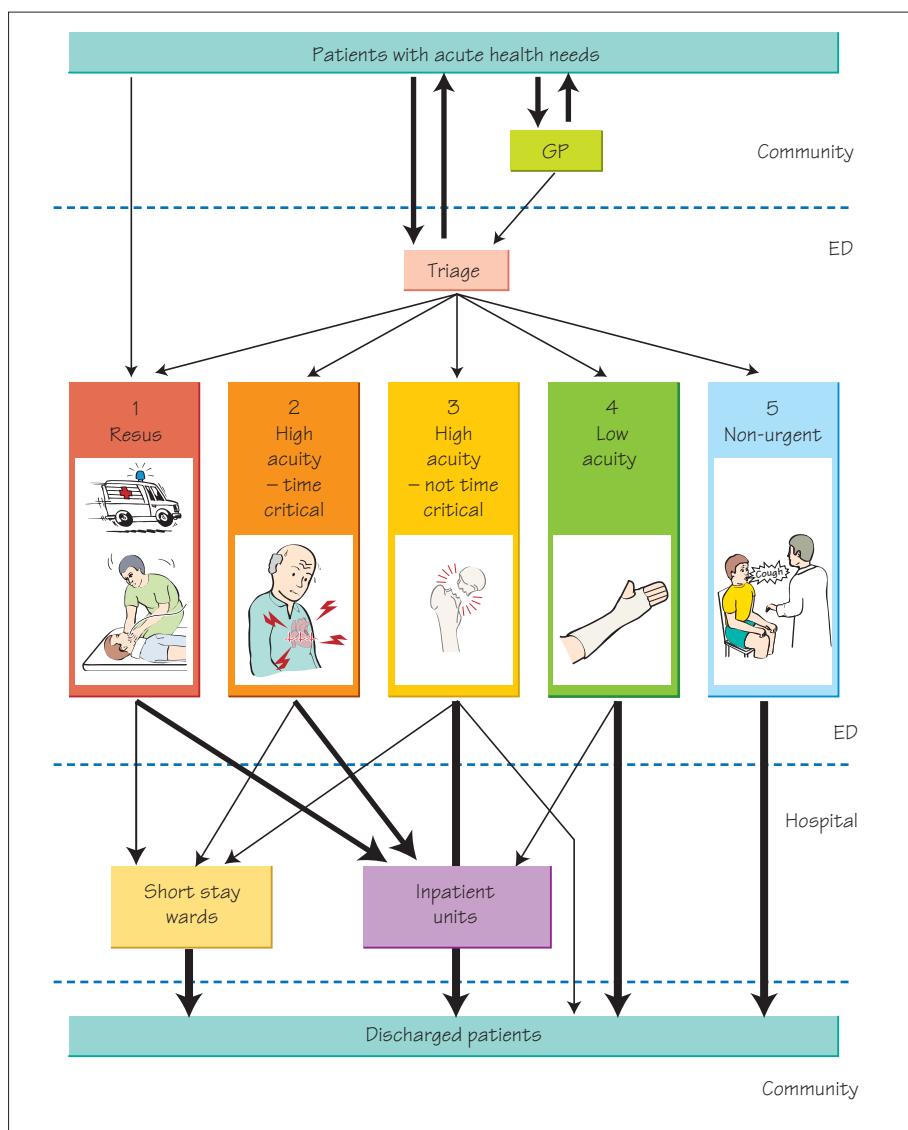
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Thomas Hughes  
Jaycen Cruickshank

## List of abbreviations

<b>AAA</b>	abdominal aortic aneurysm	<b>ED</b>	Emergency Department
<b>ABC</b>	airway, breathing, circulation	<b>EDTA</b>	ethylene diamine tetraacetate
<b>ABCD<sup>2</sup></b>	acronym to assess stroke risk in a patient with TIA	<b>ELISA</b>	enzyme-linked immunosorbent assay
<b>ABCDE</b>	airway, breathing, circulation, disability, exposure	<b>ENT</b>	ear, nose and throat
<b>ABG</b>	arterial blood gases	<b>EPL</b>	extensor pollicis longus
<b>ACE</b>	angiotensin-converting enzyme	<b>ESR</b>	erythrocyte sedimentation rate
<b>ACh</b>	acetylcholine	<b>ETT</b>	endotracheal tube
<b>ACJ</b>	acromioclavicular joint	<b>FAST</b>	acronym for focused abdominal sonography in trauma; also face, arm, speech, time to call ambulance
<b>ACL</b>	anterior cruciate ligament of knee	<b>FB</b>	foreign body
<b>ACS</b>	acute coronary syndrome	<b>FBC/FBE</b>	full blood count/examination
<b>ACTH</b>	adrenocorticotrophic hormone	<b>FiO<sub>2</sub></b>	fraction of inspired of oxygen (as %)
<b>AD</b>	aortic dissection	<b>FFP</b>	fresh frozen plasma
<b>AF</b>	atrial fibrillation	<b>FOOSH</b>	fall onto an outstretched hand
<b>AIDS</b>	acquired immunodeficiency syndrome	<b>GA</b>	general anaesthetic
<b>AMT4</b>	four-point abbreviated mental test score	<b>GAβHS</b>	group A β-haemolytic <i>Streptococcus</i>
<b>AP</b>	antero-posterior	<b>GCS</b>	Glasgow Coma Scale/Score
<b>APL</b>	abductor pollicis longus	<b>GI</b>	gastrointestinal
<b>AV</b>	arteriovenous; also atrioventricular	<b>GP</b>	general practitioner
<b>AVN</b>	atrioventricular node	<b>H1N1</b>	swine flu virus
<b>AXR</b>	abdominal X-ray	<b>H5N1</b>	avian flu virus
<b>BDZ</b>	benzodiazepine	<b>HbA<sub>1c</sub></b>	glycated (glycosylated) haemoglobin
<b>BP</b>	blood pressure	<b>HCO<sub>3</sub><sup>-</sup></b>	bicarbonate ion
<b>bpm</b>	beats per minute	<b>hCG</b>	human chorionic gonadotrophin
<b>CAGE</b>	acronym for alcohol screening questions	<b>HDU</b>	high dependency unit
<b>CAP</b>	community-acquired pneumonia	<b>HHS</b>	hyperosmolar hyperglycaemic state
<b>cAMP</b>	cyclic adenosine monophosphate	<b>HIV</b>	human immunodeficiency virus
<b>CBRNE</b>	chemical, biological, radiological, nuclear, explosive	<b>HOCM</b>	hypertrophic obstructive cardiomyopathy
<b>CK</b>	creatinine kinase	<b>HONK</b>	hyperosmolar non-ketotic acidosis
<b>CNS</b>	central nervous system	<b>HR</b>	heart rate
<b>CO</b>	carbon monoxide	<b>HVZ</b>	herpes varicella zoster
<b>COHb</b>	carboxyhaemoglobin	<b>IBS</b>	irritable bowel syndrome
<b>COPD</b>	chronic obstructive pulmonary disease	<b>ICP</b>	intracranial pressure
<b>CPAP</b>	continuous positive airway pressure	<b>ICU</b>	intensive care unit
<b>CPP</b>	cerebral perfusion pressure	<b>IgE</b>	immunoglobulin E
<b>CPR</b>	cardiopulmonary resuscitation	<b>IVDU</b>	intravenous drug use
<b>CRAO</b>	central retinal artery occlusion	<b>IVF</b>	in vitro fertilisation
<b>CRP</b>	C-reactive protein	<b>IVRA</b>	intravenous regional anaesthesia
<b>CRVO</b>	central retinal vein occlusion	<b>IVU</b>	intravenous urogram
<b>CT</b>	computed tomography	<b>JVP</b>	jugular venous pressure
<b>CTPA</b>	CT pulmonary angiography	<b>KUB</b>	kidneys, ureters and bladder
<b>CURB-65</b>	confusion, urea, respiratory rate, blood pressure, age over 65 (acronym for pneumonia severity factors)	<b>LA</b>	local anaesthetic
<b>CVP</b>	central venous pressure	<b>LCL</b>	lateral collateral ligament of knee
<b>CXR</b>	chest X-ray; also unit for X-ray dose, 1 CXR ≈ 3 days' background radiation	<b>LFT</b>	liver function test
<b>DIPJ</b>	distal interphalangeal joint	<b>LMP</b>	last menstrual period
<b>DKA</b>	diabetic ketoacidosis	<b>LNMP</b>	last normal menstrual period
<b>DM</b>	diabetes mellitus	<b>LOC</b>	loss of consciousness
<b>DSH</b>	deliberate self-harm	<b>LP</b>	lumbar puncture
<b>DUMBELS</b>	diarrhoea, urination, miosis, bronchorrhoea/bronchospasm, emesis, lacrimation, salivation (acronym for clinical effects of organophosphate poisoning)	<b>LR</b>	likelihood ratio
<b>DVT</b>	deep vein thrombosis	<b>LRTI</b>	lower respiratory tract infection
		<b>MAOI</b>	monoamine oxidase inhibitor
		<b>MAP</b>	mean arterial pressure
		<b>MCL</b>	medial collateral ligament of knee
		<b>MCPJ</b>	metacarpophalangeal joint
		<b>MDI</b>	metered dose inhaler

<b>MI</b>	myocardial infarction	<b>RoSC</b>	return of spontaneous circulation
<b>MR</b>	magnetic resonance	<b>SAH</b>	subarachnoid haemorrhage
<b>N<sub>2</sub>O</b>	nitrous oxide	<b>SAN</b>	sinoatrial node
<b>NAC</b>	<i>N</i> -acetylcysteine	<b>SARS</b>	severe acute respiratory syndrome
<b>NICE</b>	National Institute for Health and Clinical Excellence	<b>SDH</b>	subdural haematoma
<b>NIV</b>	non-invasive ventilation	<b>SoB</b>	short(ness) of breath
<b>NNT</b>	number needed to treat	<b>SOCRATES</b>	acronym for pain history
<b>NNH</b>	number needed to harm	<b>SOL</b>	space-occupying lesion
<b>#NoF</b>	fractured neck of femur	<b>SSRI</b>	selective serotonin reuptake inhibitor
<b>NSAID</b>	non-steroidal anti-inflammatory drug	<b>STD</b>	sexually transmitted disease
<b>NSTEMI</b>	non-ST segment elevation myocardial infarction	<b>STEMI</b>	ST segment elevation myocardial infarction
<b>OD</b>	overdose	<b>STI</b>	sexually transmitted infection
<b>OP</b>	organophosphate	<b>SVT</b>	supraventricular tachycardia
<b>OPG</b>	oral pantomogram	<b>TBSA</b>	total body surface area
<b>ORIF</b>	open reduction and internal fixation	<b>TCA</b>	tricyclic antidepressant
<b>PA</b>	postero-anterior	<b>TFT</b>	thyroid function test
<b>PCL</b>	posterior cruciate ligament of knee	<b>TIA</b>	transient ischaemic attack
<b>PE</b>	pulmonary embolism	<b>TIMI</b>	thrombolysis in myocardial infarction
<b>PEA</b>	pulseless electrical activity	<b>TMT</b>	tarsometatarsal
<b>PEF</b>	peak expiratory flow	<b>tPA</b>	tissue plasminogen activator
<b>PEFR</b>	peak expiratory flow rate	<b>U + E</b>	urea and electrolytes
<b>PID</b>	pelvic inflammatory disease	<b>UA</b>	unstable angina
<b>PPCI</b>	primary percutaneous coronary intervention	<b>URTI</b>	upper respiratory tract infection
<b>PPI</b>	proton pump inhibitor	<b>UTI</b>	urinary tract infection
<b>PPM</b>	permanent pacemaker	<b>VBG</b>	venous blood gases
<b>PR</b>	per rectum	<b>VF</b>	ventricular fibrillation
<b>PT</b>	prothrombin time	<b>V/Q</b>	ventilation/perfusion
<b>PV</b>	per vaginam	<b>VT</b>	ventricular tachycardia
<b>RA</b>	regional anaesthesia	<b>VVS</b>	vasovagal syncope
<b>RBBB</b>	right bundle branch block	<b>WCC</b>	white cell count



This chapter describes the way the Emergency Department operates, and some of the unwritten rules. The prevalence of Emergency Department-based drama generates plenty of misconceptions about what occurs in the Emergency Department. For instance, it is generally inadvisable to say 'stat' at the end of one's sentences, and neither of the authors has been mistaken for George Clooney!

### What happens when a patient arrives at the Emergency Department?

#### Alert phone

Also known as the 'red phone' or sometimes 'the Bat-phone', this is the dedicated phone line that the ambulance service uses to pre-

warn the Emergency Department of incoming patients likely to need resuscitation.

#### Triage

The concept of triage comes from military medicine – doing the most good for the most people. This ensures the most effective use of limited resources, and that the most unwell patients are seen first.

Nurses rather than doctors are usually used to perform the triage because doctors tend to start treating patients. Systems of rapid assessment and early treatment by senior medical staff can be effective, but risk diverting attention from the most ill patients.