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Edited by Lisa Jacobson, Yasuharu Okuda and Steven A. Godwin  
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# SIMWARS SIMULATION CASE BOOK: EMERGENCY MEDICINE

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Preface

The experiences in this book that are re-created as patient care scenarios are a compilation of multiple patient encounters over our careers. Our hope and great desire is that through the use of this material providers will be able to enhance their methods to provide more creative and effective training, with the ultimate goal of helping patients and impacting overall patient care outcomes.

We are grateful for the privilege of sharing this knowledge and these experiences with the reader and appreciate the wonderful support that we have received from family and colleagues as this material was developed.

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Abbreviations and units

ABBREVIATIONS

ABCDE	airway, breathing, circulation, disability and exposure
ABG	arterial blood gases
AC	accessory cephalic vein
ACLS	advanced cardiovascular life support
ACS	acute coronary syndrome
AND	allow natural death
ALP	alkaline phosphatase (U/L)
ALT	alanine aminotransferase (U/L)
AST	aspartate aminotransferase (U/L)
BiPAP	bilevel positive airway pressure
BLS	basic life support
BMP	basic metabolic panel
BP	blood pressure (mmHg)
BS	breath sounds
BUN	blood urea nitrogen (mg/dL)
BVM	bag valve mask
CBC	complete blood count
CHF	congestive heart failure
CPK	creatine phosphokinase
CPR	Cardiopulmonary resuscitation
CTA	clear to auscultation
CTAB	clear to auscultation bilaterally
CVA	cerebrovascular accident
CXR	chest radiograph
DNR	do not resuscitate
DOA	drugs of abuse
ED	emergency department
EEG	electroencephalography
EKG	electrocardiography
EMS	emergency medical services/personnel
ESR	erythrocyte sedimentation rate
ETCO <sub>2</sub>	end-tidal carbon dioxide

List of abbreviations and units

ETT	endotracheal tube
FAST	focused assessment with sonography in trauma
FiO <sub>2</sub>	fraction of inspired oxygen
GCS	Glasgow Coma Scale
GI	gastrointestinal
HEENT	head, eyes, ears, nose and throat examination
Hgb	hemoglobin (g/dL)
HPI	history of presenting illness
HR	heart rate (beats/min)
ICP	intracranial pressure
ICU	intensive care unit
IM	intramuscular
INR	international normalized ratio
IO	intraosseous access
IV	intravenous
IVC	inferior vena cava
JVD	jugular vein distention
LFT	liver function test
LP	lumbar puncture
LT	laryngeal tube
MAP	mean arterial pressure (mmHg)
MI	myocardial infarction
MICU	medical intensive care unit
m/r/g	murmurs/rubs/gallops
NC	nasal cannula
NG	nasogastric
NICU	neonatal intensive care unit
NKDA	no known drug allergies
NRB	non-rebreather mask
O <sub>2</sub> Sat	oxygen saturation (%)
OR	operating room
PALS	pediatric advanced life support
PCO <sub>2</sub>	partial pressure carbon dioxide (mmHg)
PEA	pulseless electrical activity
PEEP	positive end-expiratory pressure
PEERL	pupils equal, round, reactive to light
PICU	pediatric intensive care unit
PMD	primary medical doctor
PMH	past medical history
PO <sub>2</sub>	partial pressure oxygen (mmHg)
PRBC	peripheral red blood cells
PT	prothrombin time
PTT	partial thromboplastin time
RA	room air
ROSC	return of spontaneous circulation
RR	respiratory rate (breaths/min)
RSI	rapid sequence intubation
SC	subcutaneous

List of abbreviations and units

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TPA	tissue plasminogen activator
US	ultrasound
VBG	venous blood gases
VS	vital signs
WBC	white blood cell count
XR	radiograph

UNITS

	Unit	Reference range/normal
Bicarbonate	mEq/L	22–28
BUN	mg/dL	8–18
Calcium	mg/dL (mmol/L)	8.5–10.2 (2.25–2.5)
Chloride	mEq/L	95–105
Creatinine	mg/dL	0.6–1.2
Glucose	mg/dL	70–110
Hematocrit	%	33–43 (female), 39–49 (male)
Hemoglobin	g/dL	12–15(female), 12.6–17.2 (male)
Lactate	mmol/L	1.0–1.8
Liver enzymes	U/L	AST 5–40, ALT 7–56, ALP 30–120)
PaCO <sub>2</sub>	mmHg	40
PaO <sub>2</sub>	mmHg	100 (FiO <sub>2</sub> 0.21)
pH		7.35–7.45
Platelets	× 10 <sup>3</sup> /mm <sup>3</sup>	150–450
Potassium	mEq/L	3.5–5
O <sub>2</sub> Sats (FiO <sub>2</sub> 0.21)	%	97–100
Sodium	mEq/L	135–145
White blood cell count	× 10 <sup>3</sup> /mm <sup>3</sup>	3.2–9.8