

# ICM7078 Diagnostic Tools in Critical Illness

Diagnostic Tools in Critical Illness

View Online



'2-E5: Critical Care Medicine 2' (2013) *Respirology*, 18, pp. 195–197. Available at:  
[https://doi.org/10.1111/resp.12184\\_44](https://doi.org/10.1111/resp.12184_44).

(423) Pinterest (no date). Available at:  
<https://www.pinterest.co.uk/pin/7459155609437074/?!p=true>.

Abdominal trauma | Radiology Reference Article | Radiopaedia.org (no date). Available at:  
<https://radiopaedia.org/articles/abdominal-trauma>.

Abdominal x-ray review: ABDO X (summary) | Radiology Reference Article | Radiopaedia.org (no date). Available at:  
<https://radiopaedia.org/articles/abdominal-x-ray-review-abdo-x-summary>.

Acheampong, A. and Vincent, J.-L. (2015) 'A positive fluid balance is an independent prognostic factor in patients with sepsis', *Critical Care*, 19(1). Available at:  
<https://doi.org/10.1186/s13054-015-0970-1>.

Acute pancreatitis | Radiology Reference Article | Radiopaedia.org (no date). Available at:  
<https://radiopaedia.org/articles/acute-pancreatitis>.

Agricola, E. et al. (2005) '"Ultrasound Comet-Tail Images": A Marker Of Pulmonary Edema', *Chest*, 127(5), pp. 1690–1695. Available at: <https://doi.org/10.1378/chest.127.5.1690>.

Al Deeb, M. et al. (2014) 'Point-of-care Ultrasonography for the Diagnosis of Acute Cardiogenic Pulmonary Edema in Patients Presenting With Acute Dyspnea: A Systematic Review and Meta-analysis', *Academic Emergency Medicine*, 21(8), pp. 843–852. Available at: <https://doi.org/10.1111/acem.12435>.

'American Journal of Respiratory and Critical Care Medicine' (no date). Available at:  
<https://www.atsjournals.org/doi/abs/10.1164/rccm.201003-0369OC>.

Antonakaki, D. et al. (2016) 'Epstein-Barr futile myocarditis requiring urgent orthotopic heart transplantation', *Perfusion*, 31(5), pp. 431–432. Available at:  
<https://doi.org/10.1177/0267659115618460>.

'Arteriovenous blood gas agreement in intensive care patients with varying levels of circulatory compromise: a pilot study.' (no date). Available at:  
[https://www.cicm.org.au/CICM\\_Media/CICMSite/CICM-Website/Resources/Publications/CCR%20Journal/Previous%20Editions/December%202015/ccr\\_17\\_4\\_011215-253.pdf](https://www.cicm.org.au/CICM_Media/CICMSite/CICM-Website/Resources/Publications/CCR%20Journal/Previous%20Editions/December%202015/ccr_17_4_011215-253.pdf).

Atkinson, N.S.S. et al. (2017) 'How to perform gastrointestinal ultrasound: Anatomy and normal findings', *World Journal of Gastroenterology*, 23(38), pp. 6931–6941. Available at: <https://doi.org/10.3748/wjg.v23.i38.6931>.

Atkinson, P. et al. (2017a) 'International Federation for Emergency Medicine Consensus Statement: Sonography in hypotension and cardiac arrest (SHoC): An international consensus on the use of point of care ultrasound for undifferentiated hypotension and during cardiac arrest', *CJEM*, 19(06), pp. 459–470. Available at: <https://doi.org/10.1017/cem.2016.394>.

Atkinson, P. et al. (2017b) 'International Federation for Emergency Medicine Consensus Statement: Sonography in hypotension and cardiac arrest (SHoC): An international consensus on the use of point of care ultrasound for undifferentiated hypotension and during cardiac arrest', *CJEM*, 19(06), pp. 459–470. Available at: <https://doi.org/10.1017/cem.2016.394>.

Atkinson, P.R. et al. (2018) 'Does Point-of-Care Ultrasonography Improve Clinical Outcomes in Emergency Department Patients With Undifferentiated Hypotension? An International Randomized Controlled Trial From the SHoC-ED Investigators', *Annals of Emergency Medicine* [Preprint]. Available at: <https://doi.org/10.1016/j.annemergmed.2018.04.002>.

Baumgartner, H. et al. (2009) 'Echocardiographic assessment of valve stenosis: EAE/ASE recommendations for clinical practice', *European Journal of Echocardiography*, 10(1), pp. 1–25. Available at: <https://doi.org/10.1093/ejechocard/jen303>.

'Best practice recommendations for cleaning and disinfection of ultrasound transducers whilst maintaining transducer integrity' (no date). Available at: [http://efsumb.org/safety/resources/2017-probe\\_cleaning.pdf](http://efsumb.org/safety/resources/2017-probe_cleaning.pdf).

Bloom, B.M. et al. (2014) 'The role of venous blood gas in the Emergency Department', *European Journal of Emergency Medicine*, 21(2), pp. 81–88. Available at: <https://doi.org/10.1097/MEJ.0b013e32836437cf>.

Bonita Anderson (31AD) *Echocardiography: The Normal Examination and Echocardiographic Measurements*. Echotext Pty Ltd; 3rd Revised edition edition. Available at: [https://www.amazon.co.uk/Echocardiography-Normal-Examination-Echocardiographic-Measurements/dp/0992322219/ref=sr\\_1\\_1?s=books&ie=UTF8&qid=1527070994&sr=1-1&keywords=Echocardiography%3A+The+Normal+Examination+of+Echocardiographic+Measurements](https://www.amazon.co.uk/Echocardiography-Normal-Examination-Echocardiographic-Measurements/dp/0992322219/ref=sr_1_1?s=books&ie=UTF8&qid=1527070994&sr=1-1&keywords=Echocardiography%3A+The+Normal+Examination+of+Echocardiographic+Measurements).

Bowel obstruction | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/bowel-obstruction>.

Breitkreutz, R., Walcher, F. and Seeger, F.H. (2007) 'Focused echocardiographic evaluation in resuscitation management: Concept of an advanced life support–conformed algorithm', *Critical Care Medicine*, 35(Suppl), pp. S150–S161. Available at: <https://doi.org/10.1097/01.CCM.0000260626.23848.FC>.

Browning, R. et al. (2014) 'Peripheral venous and arterial lactate agreement in septic patients in the Emergency Department', *European Journal of Emergency Medicine*, 21(2),

pp. 139–141. Available at: <https://doi.org/10.1097/MEJ.0b013e328361321c>.

Cai, Q. et al. (2013) 'The left bundle-branch block puzzle in the 2013 ST-elevation myocardial infarction guideline: From falsely declaring emergency to denying reperfusion in a high-risk population. Are the Sgarbossa Criteria ready for prime time?', *American Heart Journal*, 166(3), pp. 409–413. Available at: <https://doi.org/10.1016/j.ahj.2013.03.032>.

Caiulo, V.A. et al. (2011) 'Lung ultrasound in bronchiolitis: comparison with chest X-ray', *European Journal of Pediatrics*, 170(11), pp. 1427–1433. Available at: <https://doi.org/10.1007/s00431-011-1461-2>.

Chaikof, E.L. et al. (2009) 'The care of patients with an abdominal aortic aneurysm: The Society for Vascular Surgery practice guidelines', *Journal of Vascular Surgery*, 50(4), pp. S2–S49. Available at: <https://doi.org/10.1016/j.jvs.2009.07.002>.

Chiem, A.T. et al. (2015) 'Comparison of Expert and Novice Sonographers' Performance in Focused Lung Ultrasonography in Dyspnea (FLUID) to Diagnose Patients With Acute Heart Failure Syndrome', *Academic Emergency Medicine*, 22(5), pp. 564–573. Available at: <https://doi.org/10.1111/acem.12651>.

Claire-Del Granado, R. and Mehta, R.L. (2016) 'Fluid overload in the ICU: evaluation and management', *BMC Nephrology*, 17(1). Available at: <https://doi.org/10.1186/s12882-016-0323-6>.

Coca, S.G. et al. (2010) 'The duration of postoperative acute kidney injury is an additional parameter predicting long-term survival in diabetic veterans', *Kidney International*, 78(9), pp. 926–933. Available at: <https://doi.org/10.1038/ki.2010.259>.

Contrast Manual | American College of Radiology (no date). Available at: <https://www.acr.org/Clinical-Resources/Contrast-Manual>.

Copetti, R., Soldati, G. and Copetti, P. (2008) 'Chest sonography: a useful tool to differentiate acute cardiogenic pulmonary edema from acute respiratory distress syndrome', *Cardiovascular Ultrasound*, 6(1). Available at: <https://doi.org/10.1186/1476-7120-6-16>.

'Coronary Disease in Emergency Department Chest Pain Patients with Recent Negative Stress Testing' (2010) *Western Journal of Emergency Medicine*, 11(4). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2967694/>.

Cortellaro, F. et al. (2012) 'Lung ultrasound is an accurate diagnostic tool for the diagnosis of pneumonia in the emergency department', *Emergency Medicine Journal*, 29(1), pp. 19–23. Available at: <https://doi.org/10.1136/emj.2010.101584>.

Coursebook transgit ch08 by EFSUMB - Issuu (no date). Available at: [https://issuu.com/efsumb/docs/coursebook-transgit\\_ch08?e=3336122/6603975](https://issuu.com/efsumb/docs/coursebook-transgit_ch08?e=3336122/6603975).

Ding, W. et al. (2011) 'Diagnosis of Pneumothorax by Radiography and Ultrasonography', *Chest*, 140(4), pp. 859–866. Available at: <https://doi.org/10.1378/chest.10-2946>.

Does contrast cause kidney injury? The evidence - First10EM (no date). Available at: <https://first10em.com/cin/>.

Fair, J. et al. (2019) 'Transesophageal Echocardiography During Cardiopulmonary Resuscitation Is Associated With Shorter Compression Pauses Compared With Transthoracic Echocardiography', *Annals of Emergency Medicine* [Preprint]. Available at: <https://doi.org/10.1016/j.annemergmed.2019.01.018>.

Focussed Assessment with Sonography for Trauma (FAST) scan | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/focussed-assessment-with-sonography-for-trauma-fast-scan>.

Frassi, F. et al. (2007) 'Prognostic Value of Extravascular Lung Water Assessed With Ultrasound Lung Comets by Chest Sonography in Patients With Dyspnea and/or Chest Pain', *Journal of Cardiac Failure*, 13(10), pp. 830–835. Available at: <https://doi.org/10.1016/j.cardfail.2007.07.003>.

Gargani, L. et al. (2015) 'Persistent pulmonary congestion before discharge predicts rehospitalization in heart failure: a lung ultrasound study', *Cardiovascular Ultrasound*, 13(1). Available at: <https://doi.org/10.1186/s12947-015-0033-4>.

Gottlieb, M. and Russell, F.M. (2018) 'How Safe Is the Ultrasonographically Guided Peripheral Internal Jugular Line?', *Annals of Emergency Medicine*, 71(1), pp. 132–137. Available at: <https://doi.org/10.1016/j.annemergmed.2017.08.047>.

Gulati, V.K. et al. (1996) 'Mitral annular descent velocity by tissue Doppler echocardiography as an index of global left ventricular function', *The American Journal of Cardiology*, 77(11), pp. 979–984. Available at: [https://doi.org/10.1016/S0002-9149\(96\)00033-1](https://doi.org/10.1016/S0002-9149(96)00033-1).

Gunnerson, K. et al. (2006) 'Lactate versus non-lactate metabolic acidosis: a retrospective outcome evaluation of critically ill patients', *Critical Care*, 10(1). Available at: <https://doi.org/10.1186/cc3987>.

Haemoperitoneum | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/haemoperitoneum>.

HeadNeckBrainSpine (no date). Available at: <http://headneckbrainspine.com/>.

Hoffmann, B., Nürnberg, D. and Westergaard, M.C. (2012) 'Focus on abnormal air', *European Journal of Emergency Medicine*, 19(5), pp. 284–291. Available at: <https://doi.org/10.1097/MEJ.0b013e3283543cd3>.

Houghton, A.R. (2009) *Making sense of echocardiography: a hands-on guide*. London, [England]: Hodder Arnold. Available at: <https://ebookcentral.proquest.com/lib/gmul-ebooks/detail.action?docID=564813>.

Intestinal ischaemia | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/intestinal-ischaemia>.

Is Contrast Induced Nephropathy (CIN) Really Not a Thing? - REBEL EM - Emergency Medicine Blog (no date). Available at:  
<http://rebelem.com/contrast-induced-nephropathy-cin-really-not-thing/>.

Kadappu, K.K. and Thomas, L. (2015) 'Tissue Doppler Imaging in Echocardiography: Value and Limitations', *Heart, Lung and Circulation*, 24(3), pp. 224–233. Available at:  
<https://doi.org/10.1016/j.hlc.2014.10.003>.

Kaddoura, S. (2009) *Echo made easy*. 2nd ed. Edinburgh: Churchill Livingstone. Available at:  
<http://ezproxy.library.qmul.ac.uk/login?url=http://www.vlebooks.com/vleweb/product/openreader?id=QMUL&isbn=9780702050602&uid=^u>.

Kanani, A.N. and Hartshorn, S. (2017) 'NICE clinical guideline NG39: Major trauma: assessment and initial management', *Archives of disease in childhood - Education & practice edition*, 102(1), pp. 20–23. Available at:  
<https://doi.org/10.1136/archdischild-2016-310869>.

Kaplan, L.J. and Kellum, J.A. (2007) 'COMPARISON OF ACID BASE MODELS FOR PREDICTION OF HOSPITAL MORTALITY FOLLOWING TRAUMA', *Shock [Preprint]*. Available at:  
<https://doi.org/10.1097/shk.0b013e3181618946>.

Kelly, A.-M., Klim, S. and Rees, S.E. (2014) 'Agreement between mathematically arterialised venous versus arterial blood gas values in patients undergoing non-invasive ventilation: a cohort study', *Emergency Medicine Journal*, 31(e1), pp. e46–e49. Available at: <https://doi.org/10.1136/emmermed-2013-202879>.

'Kidney Disease: Improving Global Outcomes (KDIGO) Acute Kidney Injury Work Group. KDIGO Clinical Practice Guideline for Acute Kidney Injury' (no date). Available at:  
<https://kdigo.org/wp-content/uploads/2016/10/KDIGO-2012-AKI-Guideline-English.pdf>.

Labovitz, A.J. et al. (2010) 'Focused Cardiac Ultrasound in the Emergent Setting: A Consensus Statement of the American Society of Echocardiography and American College of Emergency Physicians', *Journal of the American Society of Echocardiography*, 23(12), pp. 1225–1230. Available at: <https://doi.org/10.1016/j.echo.2010.10.005>.

Langdorf, M.I. et al. (2015) 'Prevalence and Clinical Import of Thoracic Injury Identified by Chest Computed Tomography but Not Chest Radiography in Blunt Trauma: Multicenter Prospective Cohort Study', *Annals of Emergency Medicine*, 66(6), pp. 589–600. Available at: <https://doi.org/10.1016/j.annemergmed.2015.06.003>.

Laursen, C.B. et al. (2014) 'Point-of-care ultrasonography in patients admitted with respiratory symptoms: a single-blind, randomised controlled trial', *The Lancet Respiratory Medicine*, 2(8), pp. 638–646. Available at: [https://doi.org/10.1016/S2213-2600\(14\)70135-3](https://doi.org/10.1016/S2213-2600(14)70135-3).

Lederle, F.A. (1999) 'Does This Patient Have Abdominal Aortic Aneurysm?', *JAMA*, 281(1). Available at: <https://doi.org/10.1001/jama.281.1.77>.

Leidel, B.A. et al. (2012) 'Comparison of intraosseous versus central venous vascular access in adults under resuscitation in the emergency department with inaccessible

peripheral veins', *Resuscitation*, 83(1), pp. 40–45. Available at:  
<https://doi.org/10.1016/j.resuscitation.2011.08.017>.

Libby, P. (2013) 'Mechanisms of Acute Coronary Syndromes and Their Implications for Therapy', *New England Journal of Medicine*, 368(21), pp. 2004–2013. Available at:  
<https://doi.org/10.1056/NEJMra1216063>.

Long, B. and April, M.D. (2019) 'What Is the Diagnostic Accuracy of Point-of-Care Ultrasonography in Patients With Suspected Blunt Thoracoabdominal Trauma?', *Annals of Emergency Medicine* [Preprint]. Available at:  
<https://doi.org/10.1016/j.annemergmed.2019.01.016>.

Lower gastrointestinal bleeding | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/lower-gastrointestinal-bleeding>.

Lyon, R.M. et al. (2010) 'Issues around conducting prehospital research on out-of-hospital cardiac arrest: lessons from the TOPCAT study', *Emergency Medicine Journal*, 27(8), pp. 637–638. Available at: <https://doi.org/10.1136/emj.2009.087395>.

Martindale, J.L. et al. (2016) 'Diagnosing Acute Heart Failure in the Emergency Department: A Systematic Review and Meta-analysis', *Academic Emergency Medicine*, 23(3), pp. 223–242. Available at: <https://doi.org/10.1111/acem.12878>.

McGiverny, K. et al. (2018) 'Emergency department ultrasound for the detection of B-lines in the early diagnosis of acute decompensated heart failure: a systematic review and meta-analysis', *CJEM*, 20(03), pp. 343–352. Available at:  
<https://doi.org/10.1017/cem.2018.27>.

McKeever, T.M. et al. (2016) 'Using venous blood gas analysis in the assessment of COPD exacerbations: a prospective cohort study', *Thorax*, 71(3), pp. 210–215. Available at:  
<https://doi.org/10.1136/thoraxjnl-2015-207573>.

Meyers, H.P. et al. (2015) 'Validation of the modified Sgarbossa criteria for acute coronary occlusion in the setting of left bundle branch block: A retrospective case-control study', *American Heart Journal*, 170(6), pp. 1255–1264. Available at:  
<https://doi.org/10.1016/j.ahj.2015.09.005>.

Michard, F. and Teboul, J.-L. (2000) 'Using heart-lung interactions to assess fluid responsiveness during mechanical ventilation', *Critical Care*, 4(5). Available at:  
<https://doi.org/10.1186/cc710>.

Millington, S.J. and Koenig, S. (2018) 'Better With Ultrasound', *Chest*, 153(1), pp. 224–232. Available at: <https://doi.org/10.1016/j.chest.2017.06.043>.

Moriwaki, Y. (2009) 'Ultrasonography for the Diagnosis of Intraabdominal Free Air in Chest-Abdominal-Pelvic Blunt Trauma and Critical Acute Abdominal Pain', *Archives of Surgery*, 144(2). Available at: <https://doi.org/10.1001/archsurg.2008.553>.

MR Safety | American College of Radiology (no date). Available at:  
<https://www.acr.org/Clinical-Resources/Radiology-Safety/MR-Safety>.

Muslu, B. et al. (2011) 'Use of Sonography for Rapid Identification of Esophageal and Tracheal Intubations in Adult Patients', *Journal of Ultrasound in Medicine*, 30(5), pp. 671-676. Available at: <https://doi.org/10.7863/jum.2011.30.5.671>.

Nagdev, A. and Mantuani, D. (2013) 'A novel in-plane technique for ultrasound-guided pericardiocentesis', *The American Journal of Emergency Medicine*, 31(9), p. 1424.e5-1424.e9. Available at: <https://doi.org/10.1016/j.ajem.2013.05.021>.

Neeland, I.J., Kontos, M.C. and de Lemos, J.A. (2012) 'Evolving Considerations in the Management of Patients With Left Bundle Branch Block and Suspected Myocardial Infarction', *Journal of the American College of Cardiology*, 60(2), pp. 96-105. Available at: <https://doi.org/10.1016/j.jacc.2012.02.054>.

Oveland, N.P. et al. (2013) 'Using Thoracic Ultrasonography to Accurately Assess Pneumothorax Progression During Positive Pressure Ventilation', *Chest*, 143(2), pp. 415-422. Available at: <https://doi.org/10.1378/chest.12-1445>.

Overview of abdominal aortic aneurysm - UpToDate (no date). Available at: <https://www.uptodate.com/contents/overview-of-abdominal-aortic-aneurysm>.

Paquet, A.-L. et al. (2016) 'Agreement between arterial and venous lactate in emergency department patients', *European Journal of Emergency Medicine [Preprint]*. Available at: <https://doi.org/10.1016/j.ajem.2019.01.034>.

'Percutaneous balloon dilatation of the mitral valve: An analysis of echocardiographic variables related to outcome and the mechanism of dilatation' (no date). Available at: <https://heart.bmj.com/content/heartjnl/60/4/299.full.pdf>.

Perera, P. et al. (2010) 'The RUSH Exam: Rapid Ultrasound in SHock in the Evaluation of the Critically Ill', *Emergency Medicine Clinics of North America*, 28(1), pp. 29-56. Available at: <https://doi.org/10.1016/j.emc.2009.09.010>.

Pivetta, E. et al. (2015) 'Lung Ultrasound-Implemented Diagnosis of Acute Decompensated Heart Failure in the ED', *Chest*, 148(1), pp. 202-210. Available at: <https://doi.org/10.1378/chest.14-2608>.

Ponikowski, P. et al. (2016) '2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure', *European Heart Journal*, 37(27), pp. 2129-2200. Available at: <https://doi.org/10.1093/eurheartj/ehw128>.

Price, S. et al. (2008) 'Echocardiography practice, training and accreditation in the intensive care: document for the World Interactive Network Focused on Critical Ultrasound (WINFOCUS)', *Cardiovascular Ultrasound*, 6(1). Available at: <https://doi.org/10.1186/1476-7120-6-49>.

Quinn, A.C. and Sinert, R. (2011) 'What is the utility of the Focused Assessment with Sonography in Trauma (FAST) exam in penetrating torso trauma?', *Injury*, 42(5), pp. 482-487. Available at: <https://doi.org/10.1016/j.injury.2010.07.249>.

Rodriguez, R.M. et al. (2006) 'A prospective study on esophageal Doppler hemodynamic assessment in the ED', *The American Journal of Emergency Medicine*, 24(6), pp. 658-663.

Available at: <https://doi.org/10.1016/j.ajem.2006.02.006>.

Rossaint, R. et al. (2010) 'Management of bleeding following major trauma: an updated European guideline', *Critical Care*, 14(2). Available at: <https://doi.org/10.1186/cc8943>.

Russell, F.M. et al. (2015) 'Diagnosing Acute Heart Failure in Patients With Undifferentiated Dyspnea: A Lung and Cardiac Ultrasound (LuCUS) Protocol', *Academic Emergency Medicine*, 22(2), pp. 182–191. Available at: <https://doi.org/10.1111/acem.12570>.

Sauter, T.C. et al. (2017) 'Detection of pneumothoraces in patients with multiple blunt trauma: use and limitations of eFAST', *Emergency Medicine Journal*, 34(9), pp. 568–572. Available at: <https://doi.org/10.1136/emered-2016-205980>.

Seraphim, A. et al. (2016) 'Pocket-Sized Echocardiography Devices: One Stop Shop Service?', *Journal of Cardiovascular Ultrasound*, 24(1). Available at: <https://doi.org/10.4250/jcu.2016.24.1.1>.

'Sgarbossa Criteria are Highly Specific for Acute Myocardial Infarction with Pacemakers' (2010) *Western Journal of Emergency Medicine*, 11(4). Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2967688/>.

Sgarbossa, E.B., Pinski, S.L., Gates, K.B., et al. (1996) 'Early electrocardiographic diagnosis of acute myocardial infarction in the presence of ventricular paced rhythm', *The American Journal of Cardiology*, 77(5), pp. 423–424. Available at: [https://doi.org/10.1016/S0002-9149\(97\)89377-0](https://doi.org/10.1016/S0002-9149(97)89377-0).

Sgarbossa, E.B., Pinski, S.L., Barbagelata, A., et al. (1996) 'Electrocardiographic Diagnosis of Evolving Acute Myocardial Infarction in the Presence of Left Bundle-Branch Block', *New England Journal of Medicine*, 334(8), pp. 481–487. Available at: <https://doi.org/10.1056/NEJM199602223340801>.

SGARBOSSA, E.B. (1996) 'Recent Advances in the Electrocardiographic Diagnosis of Myocardial Infarction: Left Bundle Branch Block and Pacing', *Pacing and Clinical Electrophysiology*, 19(9), pp. 1370–1379. Available at: <https://doi.org/10.1111/j.1540-8159.1996.tb04217.x>.

Smith, S.W. et al. (2012) 'Diagnosis of ST-Elevation Myocardial Infarction in the Presence of Left Bundle Branch Block With the ST-Elevation to S-Wave Ratio in a Modified Sgarbossa Rule', *Annals of Emergency Medicine*, 60(6), pp. 766–776. Available at: <https://doi.org/10.1016/j.annemergmed.2012.07.119>.

Soft Tissue Ultrasound (no date). Available at: <https://www.acep.org/sonoguide/basic/soft-tissue-ultrasound/>.

'Sonography in Hypotension and Cardiac Arrest (SHoC) Protocol Consensus Statement IFEM' (no date). Available at: <https://www.ifem.cc/wp-content/uploads/2016/02/PS-7-Sonography-in-Hypotension-and-Cardiac-Arrest-Consensus-Statement.pdf>.

'Standard of Practice and Guidance for Trauma Radiology in Severely Injured Patients' (no date). Available at:



[https://www.rcr.ac.uk/system/files/publication/field\\_publication\\_files/bfcr155\\_traumaradiol.pdf](https://www.rcr.ac.uk/system/files/publication/field_publication_files/bfcr155_traumaradiol.pdf).

Stewart, J. and National Confidential Enquiry into Patient Outcome and Death (2009) Adding insult to injury: a review of the care of patients who died in hospital with a primary diagnosis of acute kidney injury (acute renal failure). London: National Confidential Enquiry into Patient Outcome and Death. Available at: <http://www.ncepod.org.uk/2009sc.htm>.

Surgical haemostatic material | Radiology Reference Article | Radiopaedia.org (no date). Available at: <https://radiopaedia.org/articles/surgical-haemostatic-material>.

The Radiology Assistant: Welcome to the Radiology Assistant (no date). Available at: <http://radiologyassistant.nl/>.

'The Role of Ultrasound in Renal Insufficiency: The Essentials' (no date) Ultrasound Quarterly, 21(4), pp. 227–244. Available at: <http://ovidsp.ovid.com/ovidweb.cgi?T=JS&CSC=Y&NEWS=N&PAGE=fulltext&AN=00013644-200512000-00003&LSLINK=80&D=ovft>.

'The RUSH Exam: Rapid Ultrasound in Shock in the Evaluation of the Critically Ill' (no date). Available at: <https://pdfs.semanticscholar.org/86a1/b3319b1f30266c99e378720af7a298973572.pdf>.

Theerawit, P. et al. (2018a) 'The Correlation Between Arterial Lactate and Venous Lactate in Patients With Sepsis and Septic Shock', *Journal of Intensive Care Medicine*, 33(2), pp. 116–120. Available at: <https://doi.org/10.1177/0885066616663169>.

Theerawit, P. et al. (2018b) 'The Correlation Between Arterial Lactate and Venous Lactate in Patients With Sepsis and Septic Shock', *Journal of Intensive Care Medicine*, 33(2), pp. 116–120. Available at: <https://doi.org/10.1177/0885066616663169>.

'Towards evidence-based emergency medicine: best BETs from the Manchester Royal Infirmary' (no date). Available at: <https://emj.bmj.com/content/emered/25/4/222.1.full.pdf>.

Ultrasound in the evaluation of penetrating thoraco-abdominal trauma: a review of the literature (no date). Available at: <http://www.medultrason.ro/ultrasound-in-the-evaluation-of-penetrating-thoraco-abdominal-trauma-a-review-of-the-literature/>.

'Ultrasound-assisted cannulation of the internal jugular vein: A prospective comparison to the external landmark-guided technique' (no date). Available at: <https://www.ahajournals.org/doi/pdf/10.1161/01.CIR.87.5.1557>.

Via, G. et al. (2014) 'International Evidence-Based Recommendations for Focused Cardiac Ultrasound', *Journal of the American Society of Echocardiography*, 27(7), p. 683.e1-683.e33. Available at: <https://doi.org/10.1016/j.echo.2014.05.001>.

Volpicelli, G. et al. (2008) 'Bedside ultrasound of the lung for the monitoring of acute decompensated heart failure', *The American Journal of Emergency Medicine*, 26(5), pp. 585–591. Available at: <https://doi.org/10.1016/j.ajem.2007.09.014>.

Volpicelli, G. et al. (2012) 'International evidence-based recommendations for point-of-care lung ultrasound', *Intensive Care Medicine*, 38(4), pp. 577–591. Available at: <https://doi.org/10.1007/s00134-012-2513-4>.

Xirouchaki, N. et al. (2011) 'Lung ultrasound in critically ill patients: comparison with bedside chest radiography', *Intensive Care Medicine*, 37(9), pp. 1488–1493. Available at: <https://doi.org/10.1007/s00134-011-2317-y>.

Yunos, N.M. et al. (2012) 'Association Between a Chloride-Liberal vs Chloride-Restrictive Intravenous Fluid Administration Strategy and Kidney Injury in Critically Ill Adults', *JAMA*, 308(15). Available at: <https://doi.org/10.1001/jama.2012.13356>.

Zanobetti, M., Poggioni, C. and Pini, R. (2011) 'Can Chest Ultrasonography Replace Standard Chest Radiography for Evaluation of Acute Dyspnea in the ED?', *Chest*, 139(5), pp. 1140–1147. Available at: <https://doi.org/10.1378/chest.10-0435>.