CPD Scholar: EMC Hub

Selection of Clinical CEU Articles

No:	Journal Article	Total Pages	Summary	Learning Outcomes	Average read time	CEU's
1	Validation of Difficult Airway Physiological Score (DAPS) in Critically Ill Adults Undergoing Endotracheal Intubation in the Emergency Department	8	The article titled **"Validation of Difficult Airway Physiological Score (DAPS) in Critically Ill Adults Undergoing Endotracheal Intubation in the Emergency Department"** aims to validate the DAPS tool for predicting serious outcomes in critically ill patients undergoing endotracheal intubation. Conducted in an emergency department, the study evaluated 326 patients based on physiological parameters such as hypotension, hypoxia, and pH levels. The results indicated that DAPS accurately predicted adverse outcomes like hypotension, desaturation, cardiac arrest, and mortality. The study concluded that DAPS is an effective tool for assessing risks associated with difficult airway management, showing good sensitivity and specificity, particularly in emergency settings.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The Predictive Value of DAPS:** Understanding how the Difficult Airway Physiological Score (DAPS) accurately predicts post-intubation complications, including hypotension, desaturation, and cardiac arrest. 2. **Risk Factors Associated with Difficult Airway Management:** The significance of physiological variables such as age, pH level, shock index, and respiratory distress in assessing the difficulty of airway management and their direct correlation with patient outcomes. 3. **Clinical Application in Emergency Settings:** How to effectively apply DAPS in emergency departments for critically ill adults, recognizing early signs of physiological deterioration to mitigate serious adverse outcomes.	40 minutes	3
2	Prehospital neurological emergencies– a survey on the state of prehospital neurological assessment by emergency medical professionals	9	The article titled **"Prehospital Neurological Emergencies: A Survey on the State of Prehospital Neurological Assessment by Emergency Medical Professionals"** investigates the current practices and challenges faced by emergency medical service (EMS) personnel in managing neurological emergencies. The study is based on a survey conducted among paramedics, EMTs, and emergency physicians, focusing on their confidence and knowledge in diagnosing conditions such as stroke, seizure, and other neurological disorders in prehospital settings. The findings highlight a need for better training, the standardization of assessment protocols, and the integration of telemedicine to enhance care	Upon completion of this module, practitioners should have a clear understanding of: 1. **Challenges in Neurological Assessment:** The difficulties EMS professionals face in distinguishing between types of neurological emergencies, such as ischemic stroke and intracranial hemorrhage, and how these affect patient outcomes. 2. **Need for Standardized Training and Protocols:** The importance of implementing uniform neurological assessment guidelines and training to ensure that EMS professionals can confidently assess and manage neurological conditions in both adult and pediatric patients. 3. **Use of Technology in Prehospital Care:**	45 minutes	3

			quality and patient outcomes.	The potential of telemedicine, digital documentation, and emerging diagnostic technologies to improve the accuracy and efficiency of prehospital neurological assessments.		
3	Inter-Rater Agreement on Cincinnati Prehospital Stroke Scale (CPSS) and Prehospital Acute Stroke Severity Scale (PASS) Between EMS Providers, Neurology Residents and Neurology Consultants	12	Short Summary: The article titled "Inter-Rater Agreement on Cincinnati Prehospital Stroke Scale (CPSS) and Prehospital Acute Stroke Severity Scale (PASS) Between EMS Providers, Neurology Residents, and Neurology Consultants" examines the consistency between emergency medical service (EMS) providers, neurology residents, and consultants in using CPSS and PASS for assessing patients with stroke. The study involved 120 video recordings of patients, with EMS providers and neurologists evaluating stroke symptoms using these scales. The results showed high inter-rater agreement across the professional groups, demonstrating the reliability and feasibility of both CPSS and PASS for prehospital stroke assessments. The findings reinforce the usefulness of these simple scales in improving stroke diagnosis and care efficiency.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The reliability of stroke scales:** Understanding how CPSS and PASS provide consistent results across EMS providers, neurology residents, and consultants, enhancing early stroke identification. 2. **Prehospital stroke management:** The importance of using standardized, simple stroke scales for effective prehospital stroke diagnosis and improving patient outcomes. 3. **The need for continuous training:** Recognizing the role of ongoing training for EMS personnel in the accurate assessment and interpretation of stroke symptoms using CPSS and PASS.	60 minutes	3
4	Trauma system management of adults with severe burns in Victoria, Australia	7	The article **"Trauma System Management of Adults with Severe Burns in Victoria, Australia"** examines the profile, management, and outcomes of adult patients with severe burns within the Victorian State Trauma System (VSTS). The study evaluates data from 421 cases over 13 years, focusing on prehospital management, transfer times, and clinical outcomes. It found that 80% of the cases were flame burns, and a significant number of patients required ICU admission. The VSTS was highly effective in delivering patients to specialized burns services with efficient transfer times. However, mortality	Upon completion of this module, practitioners should have a clear understanding of: 1. **The effectiveness of the Victorian State Trauma System:** Understanding how the VSTS facilitates rapid and organized transport of severe burn patients to specialized centers, improving patient outcomes. 2. **Challenges in treating severe burns:** Recognizing that despite effective trauma systems, severe burn injuries are still associated with high mortality rates, particularly with larger burn areas and associated comorbidities. 3. **The importance of specialized burns**	35 minutes	3

			remained high, particularly in cases with burns covering over 70% of the total body surface area (TBSA).	**services:** Understanding that burns involving ≥20% TBSA should be managed at specialized burns centers for optimal outcomes, and the need for continuous improvement in prehospital management and transfer protocols.		
5	Emergency pediatric patients and use of the pediatric assessment triangle tool (PAT): a scoping review	14	The article titled **"Emergency Pediatric Patients and Use of the Pediatric Assessment Triangle (PAT): A Scoping Review"** explores the evidence behind the use of the Pediatric Assessment Triangle (PAT) tool in emergency pediatric settings. It examines the psychometric properties, reported impact, and practical applications of the PAT for both hospital and prehospital settings. The review concludes that the PAT is an effective, quick tool for prioritizing interventions for critically ill pediatric patients and is widely regarded as practical and easy to implement. However, the study also identifies gaps in research, such as the need for more comprehensive studies on the tool's psychometric properties and its role in teaching emergency healthcare workers.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The use of the Pediatric Assessment Triangle (PAT):** Understanding how the PAT provides a fast and efficient method to assess the urgency of pediatric cases in emergency settings. 2. **Application in both prehospital and hospital settings:** How the PAT tool can be used in different settings for quick assessment and decision-making for pediatric patients. 3. **Training and implementation needs:** Recognition of the importance of training healthcare workers on the proper use of the PAT for it to be most effective in clinical practice.	70 minutes	3
6	Accuracy of Trauma on Scene Triage Screening Tool (Shock Index, Reverse Shock Index Glasgow Coma Scale and National Early Warning Score) to Predict the Severity of Emergency Department Triage: A Retrospective Cross-Sectional Study	13	The article titled **"Accuracy of Trauma On-Scene Triage Screening Tool: Shock Index, Reverse Shock Index Glasgow Coma Scale, and National Early Warning Score"** evaluates the precision of different on-scene triage tools in predicting the severity of trauma patients transported to the emergency department (ED). The study focuses on three triage tools—Shock Index (SI), Reverse Shock Index Glasgow Coma Scale (rSIG), and the National Early Warning Score (NEWS)—and their ability to predict the severity of trauma, the need for massive transfusion protocol (MTP), and intensive care unit (ICU) admission. The results demonstrate that NEWS is the most effective tool for predicting trauma severity,	Upon completion of this module, practitioners should have a clear understanding of: 1. **Effectiveness of Triage Tools:** NEWS is the most accurate prehospital tool for predicting trauma severity, ICU admission, and the need for massive transfusion compared to SI and rSIG. 2. **Clinical Application of NEWS:** The application of NEWS in prehospital settings allows for early identification of critically injured patients, improving treatment outcomes. 3. **Implications for Prehospital Care:** The study underscores the need for standardized prehospital triage protocols to improve the outcomes for trauma patients in emergency settings.	65 minutes	3

			MTP activation, and ICU admission compared to SI and rSIG.			
7	Systematic review protocol to determine the most effective pharmacological and non-pharmacological interventions for the management of acute methamphetamine toxicity	4	The article titled **"Systematic Review Protocol to Determine the Most Effective Pharmacological and Non-Pharmacological Interventions for the Management of Acute Methamphetamine Toxicity"** outlines a systematic review protocol that seeks to assess both pharmacological and non-pharmacological strategies for managing acute methamphetamine intoxication. The study is focused on identifying interventions for methamphetamine-induced agitation and violence in emergency department settings. The primary objective is to review experimental studies that assess the effectiveness of these interventions in reducing agitation, violence, and psychosis, with a focus on the time to achieve sedation and de-escalation. Secondary outcomes include evaluating the length of stay in the emergency department, mortality, and provider satisfaction.	Upon completion of this module, practitioners should have a clear understanding of: 1. **Pharmacological and Non-Pharmacological Interventions for Methamphetamine Intoxication:** The effectiveness of interventions such as benzodiazepines, antipsychotics, and verbal de-escalation in managing violent behavior in methamphetamine-intoxicated patients. 2. **Clinical Application in Emergency Departments:** Insights into how these interventions impact clinical outcomes, including de-escalation times, patient safety, and emergency department stays. 3. **Importance of Standardized Protocols:** Recognition of the variability in approaches to methamphetamine intoxication and the need for standardized evidence-based protocols to improve patient and staff safety.	20 minutes	3
8	Optimizing damage control resuscitation through early patient identification and real-time performance improvement	11	The article titled **"Optimizing Damage Control Resuscitation through Early Patient Identification and Real-Time Performance Improvement"** explores strategies for enhancing damage control resuscitation (DCR) protocols, particularly in patients suffering from massive hemorrhage. It emphasizes the challenges of early patient identification, the use of massive transfusion protocols (MTP), and the critical role of clinical decision support systems (CDSS) and machine learning to improve real-time performance. The article outlines the principles of DCR, including balanced transfusion, avoiding over-resuscitation, and addressing the lethal triad of hypothermia, acidosis, and	Upon completion of this module, practitioners should have a clear understanding of: 1. **Effective Strategies for DCR**: Understand the principles of DCR, such as early transfusion, balanced blood product administration, and preventing over-resuscitation to manage hemorrhagic shock. 2. **Real-Time Clinical Decision Support**: How clinical decision support systems (CDSS) and machine learning can aid in real-time performance improvement, ensuring rapid and effective resuscitation strategies. 3. **Improved Patient Identification**: The importance of early identification of patients requiring massive transfusion	55 minutes	3

			coagulopathy. Promising solutions such as real-time decision-making tools, nudges, and machine learning are presented as effective ways to optimize DCR practices and improve patient outcomes.	through advanced methods like machine learning and the implementation of nudges to prompt clinical action.		
9	Human errors in emergency medical services: a qualitative analysis of contributing factors	11	The article titled **"Human Errors in Emergency Medical Services: A Qualitative Analysis of Contributing Factors"** investigates factors contributing to human errors in the EMS (Emergency Medical Services) environment. Based on interviews with paramedics and EMS supervisors, the study identifies three key categories of contributing factors: changing work environments, organizational factors, and personal factors related to the paramedics themselves. The study highlights the complexity of the EMS work environment, which often necessitates quick decision-making under pressure. The results emphasize the importance of systemic changes to reduce errors, such as improving communication, training, and support systems for paramedics.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The impact of environmental factors on paramedics:** Understanding how dynamic and often challenging EMS environments contribute to human errors. 2. **Organizational shortcomings:** Recognizing how insufficient guidelines, poor communication, and inadequate technological systems exacerbate errors in EMS. 3. **Personal and psychological challenges:** Learning how cognitive overload, fatigue, stress, and work experience influence decision-making and patient care.	55 minutes	3
10	Pain Management in a Prehospital Emergency Setting: A Retrospective Observational Study	13	The article titled **"Pain Management in a Prehospital Emergency Setting: A Retrospective Observational Study"** explores the challenges and effectiveness of pain management in prehospital settings, particularly focusing on pain assessment and treatment provided by nurse-staffed ambulances and medical cars in an Italian EMS system. It highlights that pain is often underassessed and undertreated, with almost 80% of patients experiencing pain not receiving pharmacological treatment. When treatment is provided, medications like fentanyl and paracetamol are commonly used, leading to significant reductions in pain levels. The article emphasizes the need for better adherence	Upon completion of this module, practitioners should have a clear understanding of: 1. **The Prevalence of Pain in Prehospital Settings:** Pain is a frequent symptom in emergency care but often goes unassessed or undertreated. 2. **Pharmacological Interventions for Pain Management:** The use of opioids like fentanyl, and non-opioids like paracetamol, can significantly reduce pain, though adherence to protocols is inconsistent. 3. **Challenges in Pain Management:** Barriers such as incomplete pain assessments, reluctance to use opioids, and delayed treatments contribute to suboptimal pain management in prehospital environments.	65 minutes	3

			to treatment algorithms and more comprehensive pain reassessment in prehospital care.			
11	World Allergy Organization Anaphylaxis Guidance 2020	25	The article titled *"World Allergy Organization Journal (2020)"* reviews current trends and best practices in the diagnosis and management of anaphylaxis. It delves into the global prevalence, risk factors, and mortality rates of anaphylaxis, particularly in pediatric and adult populations. The study highlights key advancements in treatment protocols, including the use of adrenaline auto-injectors, and evaluates the need for uniform guidelines for managing anaphylactic reactions. The article also emphasizes the role of cofactors in exacerbating anaphylaxis and advocates for widespread education on the timely administration of epinephrine to prevent fatalities.	Upon completion of this activity, you should have an understanding of: 1. **The global trends and risk factors associated with anaphylaxis**, and how epidemiology data informs clinical management strategies across different regions. 2. **The importance of adrenaline auto-injectors in the management of anaphylaxis**, including the barriers to their global availability and how to address these challenges. 3. **The role of cofactors in the severity of allergic reactions**, and how clinicians can improve patient outcomes through personalized management approaches.	125 minutes.	3
12	Coronary angiography after out-of-hospital cardiac arrest without ST-segment elevation: a systematic review and meta-analysis of randomised trials	9	The article titled **"Coronary Angiography after Out-of-Hospital Cardiac Arrest without ST-Segment Elevation: A Systematic Review and Meta-analysis"** examines the efficacy and safety of early versus delayed coronary angiography (CAG) in patients who experience out-of-hospital cardiac arrest (OHCA) but without ST-segment elevation on an electrocardiogram. The meta-analysis, based on seven randomized controlled trials (RCTs), found no significant difference in all-cause mortality, neurological status, renal replacement therapy, or major bleeding events between early and delayed CAG groups. The findings suggest that early CAG may not offer a mortality benefit in this specific patient population, leading the authors to call for further research to refine the timing of CAG in these patients.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The Role of Early CAG in OHCA Patients without ST-Segment Elevation**: Understanding that early CAG may not reduce mortality or improve neurological outcomes compared to delayed CAG in patients without ST-segment elevation. 2. **Clinical Decision Making for CAG Timing**: Insights into how and when coronary angiography should be performed in OHCA patients, particularly when ST-segment elevation is absent. 3. **Impact of CAG on Safety Outcomes**: Recognizing that both early and delayed CAG present similar safety profiles concerning major bleeding events and the need for renal replacement therapy.	45 minutes	3

13	Comparing NEWS2, TRISS, and RTS in predicting mortality rate in trauma patients based on prehospital data set: a diagnostic study	10	The article titled **"Comparing NEWS2, TRISS, and RTS in Predicting Mortality Rate in Trauma Patients Based on Prehospital Data Set: A Diagnostic Study"** investigates the effectiveness of different trauma scoring systems—NEWS2, TRISS, and RTS—in predicting mortality in trauma patients. Conducted in a trauma center in southern Iran, the study evaluated 4,191 trauma patients based on prehospital data. The results showed that TRISS was the most accurate in predicting mortality, followed by NEWS2 and RTS. The study concludes that while all three scoring systems effectively predict mortality, TRISS and NEWS2 show superior accuracy.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The relative effectiveness of trauma scoring systems**: NEWS2, TRISS, and RTS all predict trauma mortality, but TRISS and NEWS2 provide superior accuracy. 2. **The role of prehospital data**: The study underscores the importance of using prehospital vital signs to predict mortality in trauma patients. 3. **The time efficiency of different scoring systems**: While TRISS is the most accurate, NEWS2 provides a quicker and more practical option for clinical use.	50 minutes	3
14	Factors influencing postpartum haemorrhage detection and management and the implementation of a new postpartum haemorrhage care bundle (E-MOTIVE) in Kenya, Nigeria, and South Africa	23	The article **"Factors Influencing Postpartum Hemorrhage Detection and Management and the Implementation of a New Postpartum Hemorrhage Care Bundle (E-MOTIVE) in Kenya, Nigeria, and South Africa"** explores the causes of postpartum hemorrhage (PPH), which remains the leading cause of maternal deaths, especially in sub-Saharan Africa. The study looks at the implementation challenges and enablers for a new care bundle designed to improve the detection and management of PPH. It identified a range of individual, socio-cultural, and systemic factors that hinder or facilitate effective care. This research applies the Theoretical Domains Framework (TDF) and Behavior Change Wheel to identify key influences on PPH care, from lack of training to shortages of drugs and other resources.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The primary challenges in PPH detection and management in low-resource settings**: Understanding how resource shortages, inadequate training, and socio-cultural factors hinder the implementation of evidence-based practices. 2. **The E-MOTIVE bundle for PPH care**: Learning the steps of the new PPH care bundle and how it aims to improve rapid detection and management of hemorrhage. 3. **Behavioral interventions for improving PPH outcomes**: Gaining insights into the necessary educational and systemic interventions that can enhance the uptake of new care practices.	115 minute	3
15	Management of severe trauma worldwide: implementation of trauma	10	The article *"Management of Severe Trauma Worldwide: Implementation of Trauma Systems in Emerging Countries—China,*	1. **The key components of trauma care systems in China, Russia, and South Africa**, including pre-hospital and in-	50 minutes.	3

	systems in emerging countries: China, Russia and South Africa		*Russia, and South Africa"* examines the trauma systems of these three countries, focusing on their pre-hospital and in-hospital care, trauma centers, trauma registry, and governance. The study provides a comparative analysis of how trauma care systems in China, Russia, and South Africa are being developed or enhanced to respond to the rising number of injuries, particularly due to road accidents and natural disasters. Each country faces unique challenges, such as geographic vastness and inequality in access to medical resources, and the study suggests improvements, such as the development of aeromedical services and better coordination between public and private healthcare sectors.	hospital care, trauma centers, and the use of trauma registries. 2. **The specific challenges faced by each country in managing trauma care**, such as geographic limitations, the absence of national trauma registries, and disparities in healthcare access. 3. **The proposed strategies for improving trauma care in these countries**, such as the introduction of aeromedical services in remote regions, the creation of national trauma registries, and enhanced training for healthcare providers.		
16	Predictive performances of ALS and BLS termination of resuscitation rules in out-of-hospital cardiac arrest for different resuscitation protocols	9	The article titled **"Predictive Performances of ALS and BLS Termination of Resuscitation Rules in Out-of-Hospital Cardiac Arrest for Different Resuscitation Protocols"** analyzes the effectiveness of the Basic Life Support (BLS) and Advanced Life Support (ALS) termination of resuscitation (TOR) rules in out-of-hospital cardiac arrest (OHCA) cases. The study compares the outcomes based on two different sets of American Heart Association (AHA) guidelines (2010 and 2015) in Tainan City, Taiwan. The results demonstrate that the TOR rules perform better when using the updated 2015 resuscitation protocols, particularly in predicting unfavorable neurological outcomes. The BLS and ALS TOR rules show increased positive predictive values (PPV) and reduced false-positive rates (FPR) with the newer guidelines, highlighting the need for ongoing evaluation of TOR protocols as.	Upon completion of this module, practitioners should have a clear understanding of: 1. The predictive performance of BLS and ALS termination of resuscitation rules: Knowledge of how these rules are applied in OHCA scenarios and their effectiveness in predicting survival and neurological outcomes. 2. The impact of updated resuscitation protocols on TOR rule performance: Insights into how changes in AHA guidelines (from 2010 to 2015) have improved the accuracy of TOR rules. 3. The role of resuscitation efforts in improving patient outcomes: Understanding the importance of continuous improvement in CPR techniques and resuscitation protocols to optimize survival rates and neurological outcomes.	45 minutes	3

17	Prehospital Tranexamic Acid for Severe Trauma	10	The article titled **"Prehospital Tranexamic Acid for Severe Trauma"** examines the effect of tranexamic acid administered before hospital admission on trauma patients at risk of trauma-induced coagulopathy. The study involved 1,310 patients from advanced trauma systems in Australia, New Zealand, and Germany. The participants were randomly assigned to receive either tranexamic acid or a placebo. The results showed no significant difference in survival with favorable functional outcomes at six months between the tranexamic acid group and the placebo group. However, the study noted a reduction in mortality within 28 days for those receiving tranexamic acid. The trial highlights the ongoing uncertainty around the use of tranexamic acid in advanced trauma systems, despite its success in reducing early mortality.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The use of tranexamic acid in prehospital settings**: Understanding that while tranexamic acid may reduce early mortality in severe trauma patients, it does not necessarily lead to improved long-term functional outcomes. 2. **Impact of tranexamic acid on early mortality**: Knowledge of how tranexamic acid may reduce deaths due to bleeding within 28 days of injury in patients at risk of trauma-induced coagulopathy. 3. **Limitations of tranexamic acid in trauma care**: Insights into the potential risks, including thrombotic complications, and the lack of significant improvement in long-term functional outcomes associated with tranexamic acid use.	50 minutes	3
18	Change from semi-rigid to soft collars for prehospital management of trauma patients: An observational study	6	The article, **"Change from Semi-Rigid to Soft Collars for Prehospital Management of Trauma Patients: An Observational Study,"** discusses the transition from using semi-rigid collars to soft collars for cervical spine management in prehospital trauma care. The study was conducted by Ambulance Victoria and focused on examining differences in clinical outcomes, including imaging practices and diagnoses of spinal cord injuries, pressure sores, and hospital-acquired pneumonia. Results showed that more patients were imaged with a CT scan, and cervical spine clearance in the emergency department was higher after the introduction of soft collars. However, there were no significant differences in the rates of spinal cord injuries, pressure sores, or hospital-acquired pneumonia.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The impact of soft collars on cervical spine management**: Practitioners will understand that soft collars are associated with increased imaging but do not significantly affect outcomes like spinal cord injuries. 2. **Changes in cervical spine clearance practices**: Learners will comprehend how soft collars led to more frequent cervical spine clearance in emergency departments. 3. **The safety of transitioning to soft collars**: The study supports that switching to soft collars does not increase the risk of adverse outcomes such as pressure sores or spinal cord injuries.	30 minutes	3

19	Management of Refractory Anaphylaxis: An Overview of Current Guidelines	19	The article, titled **"Management of Refractory Anaphylaxis: An Overview of Current Guidelines,"** reviews existing guidelines on the treatment of refractory anaphylaxis (RA), particularly focusing on the cardiovascular aspects. RA occurs when patients do not respond adequately to initial doses of intramuscular (IM) adrenaline. The article discusses various treatment options, including the administration of additional doses of adrenaline, fluid resuscitation, and the use of second-line treatments such as vasopressors (e.g., noradrenaline), glucagon, and methylene blue. The paper also highlights the knowledge gaps in managing RA and calls for more research to clarify the pathophysiology behind RA.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The definition and recognition of refractory anaphylaxis (RA)**: Practitioners will learn how to identify RA, which occurs when two or more doses of adrenaline fail to resolve anaphylaxis. 2. **Appropriate use of adrenaline and second-line treatments**: The importance of timely adrenaline administration and the role of vasopressors like noradrenaline in cases of persistent cardiovascular collapse. 3. **Management strategies for severe cases of RA**: How to employ fluid resuscitation, glucagon for beta-blocker patients, and when to consider advanced therapies like extracorporeal life support (ECLS).	95 minutes	3
20	Effects of advanced life support versus basic life support on the mortality rates of patients with trauma in prehospital settings: a study protocol for a systematic review and meta-analysis	5	The article, "Effects of Advanced Life Support (ALS) versus Basic Life Support (BLS) on Mortality Rates of Trauma Patients in Prehospital Settings", is a protocol for a systematic review and meta-analysis. The study aims to determine whether ALS is more beneficial than BLS for trauma patients in prehospital care. It discusses the potential advantages and disadvantages of both approaches, noting that while ALS might improve survival in some cases, it could also delay definitive care due to increased on-scene time. The article outlines the methods for conducting a systematic review of the current literature to answer this question, focusing on outcomes such as survival to hospital discharge and neurological outcomes. It also addresses concerns about prehospital procedures like intubation and fluid resuscitation, which can have both positive and negative impacts depending on the context.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The differences between ALS and BLS in trauma care**: Practitioners will learn how ALS and BLS affect prehospital care and patient outcomes. 2. **The potential impact of ALS on on-scene time**: ALS can sometimes delay transport to the hospital, which may negatively impact trauma patients' prognosis. 3. **The need for careful selection of prehospital interventions**: Understanding the controversy surrounding advanced procedures like intubation and fluid resuscitation, which may not always improve outcomes.	25 minutes	3

21	Airway management in patients with suspected or confirmed cervical spine injury	13	This article, titled **"Airway Management in Patients with Suspected or Confirmed Cervical Spine Injury,"** focuses on the critical aspects of airway management in patients who have or are suspected to have cervical spine injuries. The article highlights how cervical spine injuries pose unique challenges in airway management, where improper techniques could exacerbate existing neurological deficits or create new spinal cord injuries. After conducting a systematic review of the literature and using expert opinion, the article presents key guidelines for practitioners, discussing techniques like pre-oxygenation, tracheal intubation, videolaryngoscopy, and the use of supraglottic airway devices. It emphasizes minimizing cervical spine movement during airway procedures and suggests videolaryngoscopy as the most effective technique to reduce risks in such scenarios.	Upon completion of this module, practitioners should have a clear understanding of: 1. **Proper Techniques to Maintain Airway in Cervical Spine Injuries**: Practitioners will learn specific techniques for maintaining the airway while minimizing cervical spine movement, such as jaw thrust over chin lift. 2. **Risks and Recommendations for Airway Devices**: Understanding which airway devices (e.g., second-generation supraglottic airway devices and videolaryngoscopy) are most effective in patients with cervical spine immobilization. 3. **Guidelines for Tracheal Intubation in Critical Scenarios**: The role of awake tracheal intubation, the necessity of removing rigid cervical collars during intubation, and the application of cricoid force in airway management.	65 minutes	3
22	**Bag-Valve Mask versus Endotracheal Intubation in Out-of-Hospital Cardiac Arrest on Return of Spontaneous Circulation: A National Database Study**	4	The article, **"Bag-Valve Mask versus Endotracheal Intubation in Out-of-Hospital Cardiac Arrest on Return of Spontaneous Circulation (ROSC): A National Database Study"**, compares the effectiveness of bag-valve mask (BVM) and endotracheal intubation (ETI) in out-of-hospital cardiac arrest (OHCA) cases. The study involved 1,070 patients and examined which method led to higher rates of ROSC. The findings show that BVM had a slightly higher ROSC rate (19.63%) compared to ETI (15.56%), though the difference was not statistically significant. The study concludes that both methods are comparable, but patients in the BVM group tended to receive faster treatment and had less severe conditions.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The comparative effectiveness of BVM and ETI in achieving ROSC**: Both methods show similar outcomes in prehospital cardiac arrest care. 2. **Factors influencing the preference for ETI in more severe cases**: ETI is more commonly used in patients requiring intravenous access, adrenaline administration, and defibrillation, which indicates a more severe clinical status. 3. **The importance of response time and prehospital interventions**: Faster response times and early interventions, such as BVM, are associated with better ROSC outcomes.	20 minutes	3

23	**Acute Myocardial Infarction in Young Men Under 50 Years of Age: Clinical Characteristics, Treatment, and Long-Term Prognosis**	11	The article, **"Acute Myocardial Infarction in Young Men Under 50 Years of Age: Clinical Characteristics, Treatment, and Long-Term Prognosis,"** explores the rising prevalence of acute myocardial infarction (AMI) in younger adults, especially men under 50. This study examines the clinical characteristics, treatment approaches, and long-term outcomes of AMI patients, dividing them into three age groups (<50, 50-65, and ≥65). The study reveals that younger patients have a lower prevalence of conditions like diabetes and previous strokes but present with high-risk factors such as smoking and obesity. The younger age group also had better survival rates despite presenting with significant traditional modifiable risk factors. The study calls for better lifestyle interventions and modifiable risk factor management for younger patients experiencing AMI.	Upon completion of this module, practitioners should have a clear understanding of: 1. **Risk Factors in Young AMI Patients**: Practitioners will learn that younger AMI patients under 50 show a high prevalence of modifiable risk factors such as smoking and obesity, despite fewer underlying conditions like diabetes. 2. **Clinical Outcomes and Mortality Differences**: Understanding that younger patients generally have better survival rates and lower all-cause mortality compared to older adults, but remain at high risk due to unhealthy lifestyle factors. 3. **Importance of Lifestyle Interventions**: Practitioners will recognize the need for focusing on lifestyle modifications, especially smoking cessation, weight management, and cardiovascular health monitoring in younger AMI patients.	55 minutes	3
24	Prehospital guidelines on in-water traumatic spinal injuries for lifeguards and prehospital emergency medical services: an international Delphi consensus study	15	The article titled **"Prehospital Guidelines on In-Water Traumatic Spinal Injuries for Lifeguards and Prehospital Emergency Medical Services"** discusses the development of standardized prehospital guidelines for handling in-water traumatic spinal cord injuries (TSCI) by lifeguards and EMS personnel. Using a Delphi consensus process involving international experts, the study aimed to establish a set of recommendations and a flowchart to guide spinal motion restriction (SMR) practices. The study emphasizes the importance of prompt, safe rescue and the avoidance of spinal immobilization when there is imminent danger, such as drowning. The result is 25 consensus recommendations and a flowchart, which aims to help standardize TSCI management across different regions and EMS systems.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The importance of scene safety and risk assessment in water rescues involving suspected spinal cord injuries**, ensuring that the safety of both the rescuer and the patient is prioritized. 2. **The conditions under which spinal motion restriction (SMR) should be performed and when it should be avoided**, particularly in cases where the patient is in danger of drowning. 3. **Clear guidelines on how to manage in-water traumatic spinal cord injuries** using a flowchart that received strong consensus from international experts.	75 minutes	3

25	Mechanical versus manual cardiopulmonary resuscitation (CPR): an umbrella review of contemporary systematic reviews and more	19	This article, titled **"Mechanical versus Manual Cardiopulmonary Resuscitation (CPR): An Umbrella Review of Contemporary Systematic Reviews and More,"** provides a comprehensive comparison between mechanical and manual CPR methods. The study aimed to analyze the efficacy of mechanical CPR devices compared to manual CPR, specifically focusing on outcomes such as the return of spontaneous circulation (ROSC), survival to hospital discharge, and long-term neurological outcomes. Despite the advancements in mechanical CPR devices, the findings from multiple systematic reviews indicate that there is no definitive superiority of mechanical CPR over manual CPR in terms of improving patient survival and neurological recovery. The study also highlights the importance of high-quality manual CPR in situations where mechanical devices may not be applicable or effective.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The comparative effectiveness of mechanical CPR devices versus manual CPR**, and when it may be beneficial to opt for mechanical CPR in certain prehospital and in-hospital settings. 2. **The key performance metrics for CPR, including ROSC, survival to hospital discharge, and neurological function recovery**, and how these outcomes differ between mechanical and manual CPR methods. 3. **The clinical scenarios where mechanical CPR may serve as a better alternative**, particularly in situations where high-quality manual CPR is difficult to perform or sustain.	95 minutes	3
26	Inhaled methoxyflurane (Penthrox) for analgesia in trauma: a systematic review protocol | Systematic Reviews | Full Text (biomedcentral.com)	6	The article titled **"Inhaled Methoxyflurane (Penthrox) for Analgesia in Trauma: A Systematic Review Protocol"** outlines a research protocol designed to systematically review the efficacy and safety of methoxyflurane for managing pain in trauma patients. Methoxyflurane, once an anesthetic, is now used as an analgesic administered via an autoinhaler. The protocol focuses on assessing its effectiveness compared to other forms of analgesia, such as opioids and nitrous oxide, in pre-hospital and emergency department settings. The review will consider randomized controlled trials to measure patient-reported pain relief, time to pain relief, and the occurrence of adverse effects. The article anticipates	Upon completion of this module, practitioners should have a clear understanding of: 1. **The potential advantages of inhaled methoxyflurane over traditional analgesics**, particularly its portability, rapid onset of action, and suitability for emergency and pre-hospital care. 2. **The methodological approach for evaluating the effectiveness of methoxyflurane**, including the reliance on randomized controlled trials and patient-reported outcomes for assessing pain relief. 3. **Possible risks associated with methoxyflurane use**, such as occupational hazards for healthcare workers, which need to be mitigated by using safety measures like charcoal filters	30 minutes	3

			methoxyflurane as a potentially superior pain management option due to its ease of use, rapid action, and suitability for emergency environments.	in closed environments.		
27	A simple improvised prehospital method to warm intravenous fluid	4	The article titled **"A Simple Improvised Prehospital Method to Warm Intravenous Fluid"** investigates a practical and innovative method for warming intravenous (IV) fluids in prehospital settings using a vehicle's dashboard defroster vent. Warming IV fluids is critical in preventing hypothermia during trauma resuscitation, where cold IV fluids could contribute to further drops in body temperature. The study was conducted in a simulated environment using a sport utility vehicle's defroster to warm a saline bag. The research found that positioning the IV fluid bag on the dashboard defroster significantly raised the fluid's temperature compared to fluids left at ambient temperature. This simple improvised method is proposed as a practical solution for emergency medical services (EMS) personnel in austere environments where traditional warming equipment may not be available.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The importance of warming IV fluids in trauma care to prevent hypothermia** and the risks associated with administering cold fluids during resuscitation. 2. **The effectiveness of using a vehicle's defroster as an improvised method** for warming IV fluids in prehospital settings, providing a simple solution when traditional warming devices are not available. 3. **The limitations and practical considerations of this method**, such as the importance of administering the warmed fluids promptly to prevent heat loss and the impact of environmental conditions on the warming process.	20 minutes	3
28	Safety of prehospital intravenous bolus dose nitroglycerin in patients with acute pulmonary edema: A 4-year review	7	The article, titled **"Safety of Prehospital Intravenous Bolus Dose Nitroglycerin in Patients with Acute Pulmonary Edema: A 4-Year Review,"** focuses on evaluating the safety of using intravenous bolus nitroglycerin (NTG) in prehospital settings for patients with congestive heart failure (CHF) and acute pulmonary edema (APE). The study involved a retrospective analysis of EMS data over four years, examining patients with hypertensive CHF and APE who received intravenous NTG. The research aimed to assess adverse events, including hypotension, syncope, vomiting, and dysrhythmia, and measure the efficacy	Upon completion of this module, practitioners should have a clear understanding of: 1. **The safety profile of intravenous bolus nitroglycerin in prehospital settings** for treating hypertensive patients with CHF and acute pulmonary edema, with a focus on reducing preload and afterload. 2. **The clinical benefits of using bolus intravenous nitroglycerin**, demonstrated by improvements in blood pressure and oxygen saturation, without significant adverse effects like hypotension or dysrhythmia. 3. **The potential for intravenous NTG to be integrated into prehospital care**	35 minutes	3

			of this approach in reducing blood pressure and improving oxygen saturation. The findings support the safety of using bolus intravenous NTG, with minimal adverse effects reported and significant improvements in patient outcomes.	**protocols**, offering a valuable treatment option for managing acute heart failure with pulmonary edema in emergency medical services (EMS).		
29	Developing a prehospital care service in a low-resource setting: Barriers and solutions	4	The article titled **"Developing a Prehospital Care Service in a Low-Resource Setting: Barriers and Solutions"** focuses on the challenges and solutions associated with establishing prehospital care (PHC) systems in low-income countries (LICs). The authors highlight the critical role of PHC in reducing morbidity, mortality, and permanent disability caused by severe illnesses and injuries. The paper explores barriers such as funding issues, cultural beliefs, and communication challenges that prevent effective PHC system implementation. Proposed solutions include public education, securing external funding, and integrating local communities into the system to improve health outcomes. The article emphasizes the importance of a multi-stakeholder approach to ensure the sustainability and success of prehospital care in resource-limited environments.	Upon completion of this module, practitioners should have a clear understanding of: 1. **The financial, cultural, and infrastructural challenges** in developing and sustaining prehospital care services in low-resource settings. 2. **The importance of integrating community involvement and education** in promoting the use and effectiveness of prehospital care services. 3. **Strategic solutions, including multi-stakeholder engagement and securing external funding,** to address the barriers to prehospital care system development in low-income countries.	20 minutes	3
30	Prehospital tourniquet use in civilian extremity trauma: an Australian observational study	5	The article titled **"Prehospital Tourniquet Use in Civilian Extremity Trauma: An Australian Observational Study"** focuses on the safety and efficacy of prehospital tourniquet (PHTQ) use in trauma cases in Australia, based on a retrospective review from 2016 to 2019. The study evaluates 31 patients with PHTQ application, assessing the nature of the injuries, the duration of tourniquet use, and any complications arising from its use. The findings show that while the tourniquet times were longer than those reported in other countries, the	Upon completion of this module, practitioners should have a clear understanding of: 1. **The appropriate application and timing of prehospital tourniquets** in cases of extremity trauma, considering the balance between hemorrhage control and the risk of complications such as ischemia. 2. **The common types of extremity trauma treated with tourniquets** in the civilian setting, including road traffic accidents and penetrating injuries, and how these differ from military and North American civilian data.	25 minutes	3

			complication rates were consistent with published literature. Most patients in the study had successful outcomes with minimal complications, highlighting the value of PHTQ in controlling life-threatening hemorrhage in trauma cases.	3. **The importance of ongoing monitoring and documentation** to ensure optimal tourniquet use and reduce risks, especially in settings where prolonged tourniquet times may occur.		