Update Analysis

The 2017 supplementary guidelines are published in addition to the UK Ambulance Service Clinical Practice Guidelines 2016.

Section 1

General Guidance	*Addition/update of guidance and rationale*
Pain Management in Adults	This guideline has been significantly updated. ● The 0–10 point verbal numerical scale in which 0 refers to no pain and 10 is the worst imaginable pain is recommended. ● For patients with communication difficulties and dementia, the Abbey Pain Scale is recommended. ● Clinical evaluation of chronic pain is covered. ● Ambulance clinicians should consider biopsychosocial factors. ● 'Balanced analgesia' with a multimodal pain plan is recommended by JRCALC in pre-hospital pain management and involves administration of analgesics with different mechanisms of action. ● An algorithm on the routes of administration according to pain severity is included. ● Pain measurements and re-assessments will help to monitor progress. ● New information is provided about Methoxyflurane (Penthrox).
Safeguarding Children	This guideline has been significantly updated in line with current legislation. ● Members of staff have a duty of care to report abuse or neglect. If the abuse is not reported, the victim may be at greater risk. ● Emotional abuse, sexual abuse, child sexual exploitation/abuse, physical abuse and neglect are discussed. ● Mandatory reporting of female genital mutilation (FGM) is included.
Sexual Assault	This guideline has been significantly updated. ● Sexual assault may be concurrent with other injuries that will need treating. ● The decision to report a sexual assault on an adult is entirely the decision of the victim. There is no statutory obligation for victims of sexual violence to report to police and many victims elect not to report to protect their safety, privacy or both. ● Where the victim requests police involvement, forensic awareness is essential. Within the limits of any immediate care needs, there is a responsibility to preserve evidence. ● Sexual Assault Referral Centres provide recent victims of sexual assault with immediate care and crisis support from specialist staff trained to allow patients to make informed decisions. ● Patients refusing referral to support services place a duty of care on clinicians to ensure their immediate safety. Encouraging patients to call a friend or relative for support is a priority. In these cases, patients should be given details of their nearest GUM clinic and rape crisis services.
Safeguarding Adults at Risk	This guideline has been significantly updated in line with current legislation. ● Ambulance clinicians are often the first professionals to make contact with adults at risk and may identify initial concerns regarding abuse. The role of the ambulance service is not to investigate suspicions but to ensure that any suspicion is passed, with the consent of the adult (where no consent, state why), to the appropriate agency (e.g. social care or the police) in line with locally agreed procedures. ● The six key principles underpinning the Care Act guidance are covered: empowerment, prevention, proportionality, protection, partnership and accountability. ● Types and signs of abuse are explained. ● Mandatory Reporting of FGM is included. ● The NHS, including the ambulance service, has a statutory responsibility to comply and engage with Prevent. Any member of staff identifying concerns that vulnerable people may be radicalised, should report to the safeguarding service, their Prevent lead or their line manager in the Trust.

Domestic Abuse	This is a new guideline. ● If staff suspect a crime has been committed resulting in harm to the patient, the police must be called. ● Listen closely to the patient for disclosure, and document this on the patient record. ● If possible, take the patient away from the scene. ● Treatment should avoid disturbing evidence where possible. ● Take into account any information that is disclosed by children. ● Never leave a child with an alleged perpetrator if transporting the patient to hospital. ● Accommodate patient wishes where possible.

Section 3a

Medical – Undifferentiated Complaints	***Addition/update of guidance and rationale***
Altered Level of Consciousness	Adrenal insufficiency (adrenal crisis) is added as a red flag condition that should be considered as a cause of altered level of consciousness.
Medical Emergencies in Adults – Overview	More detail is included about the management of patients with adrenal insufficiency (adrenal crisis). Emphasis is on its potentially life threatening nature, the risk of circulatory collapse, the need for early and prompt treatment and administration of hydrocortisone, fluids and rapid transport.
Sepsis	This is a completely new guideline. We purposely decided not to develop or include a sepsis screening algorithm or tool. JRCALC recommends using tools that have been agreed locally in your own organisation, or across a network or region, along with use of a NEWS score. We are aware of the development of NEWS2, and this guideline will be updated after it becomes available. The red, amber and green tables in the febrile illness in children guideline are slightly different from the more up-to-date tables in this new sepsis guideline. This will be addressed as part of a future update in the febrile illness in children guideline. ● Think 'could this be sepsis?' if a person presents with fever/feeling unwell with a NEWS greater than or equal to 5. ● Think 'could this be sepsis?' if a person looks unwell with a history of infection. ● NEWS does not diagnose sepsis – it simply identifies sick patients who need urgent senior medical review and intervention. ● Keep on scene times to a minimum – delaying transport may increase mortality. ● Provide a pre-alert and NEWS score to the receiving hospital – 'patient has suspected sepsis' – in line with local arrangements.

Section 3b

Medical – Specific Conditions	***Addition/update of guidance and rationale***
Asthma (Adults)	Reference to T piece nebuliser is removed.
Asthma (Children)	Reference to T piece nebuliser is removed.

Section 4

Trauma	*Addition/update of guidance and rationale*
	Four pieces of trauma guidance have been updated in line with NICE major trauma guidance. Emphasis on conveyance destination, major trauma centres and use of ATMIST is included.
Limb Trauma	● Emphasis on major trauma centres, use of ATMIST and antibiotics for open fractures. ● Do not irrigate open fractures of the long bones, hindfoot or midfoot. ● Management of amputations, partial amputations and degloving are covered.
Spinal Injury and Spinal Cord Injury	This guideline replaces the Neck and Back Trauma guideline ● Immobilise the whole spine until it is positively cleared. ● Immobilise the whole spine in all unconscious blunt trauma patients. ● Falls are a frequent cause of SCI in the older person. Maintain a high index of suspicion in cases of older people who have had low energy falls. ● If the cervical spine is immobilised, the thoracic and lumbar spine also needs immobilisation. ● Asking a patient to self-extricate is acceptable, but is not clearing the cervical spine. ● Standard immobilisation is by means of collar (unless contraindicated or counterproductive), head blocks, tape and scoop. ● Longboard is solely used as an extrication device, and not for transporting patients to hospital. ● Aspiration of vomit, pressure sores and raised intracranial pressure are major complications of immobilisation. ● Red flag signs and symptoms of the medical emergency Cauda Equina Syndrome (CES) are covered. ● A new immobilisation algorithm is presented.
Major Pelvic Trauma	● Always suspect a pelvic fracture in a blunt high-energy trauma. ● Give tranexamic acid as soon as possible for active or suspected active bleeding from a pelvic fracture.
Thoracic Trauma	● $EtC0_2$ presents an immediate picture of the patient's condition. ● Open chest wounds: seal the wound with a proprietary dressing with a valve, but if none are available use a three-sided dressing. ● Open thoracostomy can be performed if an appropriately skilled practitioner is available.
Falls in Older Adults	This is a completely new guideline. ● The term 'mechanical fall' is not an appropriate term to use when describing a fall. ● Initial assessment should exclude the possibility of syncope. ● A thorough and careful physical examination is required along with a high index of suspicion, to exclude common but easily missed injuries. ● Some older people who fall may prefer to be managed in the community or at home, and where possible this should be supported, particularly where family/carers can also provide support. ● All older people who have fallen resulting in an ambulance call/attendance, but are then managed at home, should be offered referral pathways as per local guidelines. ● Ambulance clinicians have a role to play in talking with people who are at risk of falling, or who have fallen, to try and prevent further falls.

Section 5

Maternity Care	*Addition/update of guidance and rationale*
	The full section has been updated and significantly revised, helpful visual photographs and new algorithms are included. Maternal resuscitation and newborn life support are now included in the maternity care sections; previously, these were in the resuscitation section of the book. Trauma in pregnancy has also been moved from the trauma section to the maternity care section.
Maternity Care (including Obstetric Emergencies Overview)	This replaces the Obstetrics and Gynaecology Emergencies Overview guideline. ● Human Factors, MBRRACE-UK, communication, information sharing and consent are covered. ● A new section on special cases, including concealment, denial and unknown pregnancy is added. ● FGM is discussed. ● The appropriate destination to convey mother and baby is discussed. ● A new pre-hospital maternity emergency management for normal birth algorithm is provided.
Birth Imminent: Normal Birth and Birth Complications	● New algorithms on management of eclampsia, cord prolapse, post-partum haemorrhage, breech birth and shoulder dystocia are included. ● Tranexamic acid can be administered for PPH. ● For a woman experiencing an abnormal labour or birth, transfer immediately to the nearest obstetric unit. This includes: – severe vaginal bleeding – preterm or multiple births – prolapsed umbilical cord – continuous severe abdominal/epigastric pain – maternal convulsions (eclampsia) – presentation of the baby other than the head (e.g. arm or leg or buttocks) – shoulder dystocia. ● If the woman presents with an obvious medical or traumatic condition that puts her life in imminent danger, transfer to the nearest ED with an obstetric unit. ● The period of gestation is important in informing the appropriate course of action, including the most appropriate location for conveyance, namely an ED, an early pregnancy unit or an obstetric unit. ● In the event of an obstetric emergency, detailing the exact emergency via a pre-alert call will assist the ED or maternity unit to summon the appropriate staff. ● Maintaining normothermia in the newborn is critical while on scene and during conveyance. The optimum body temperature of the baby should be between 36.5 and 37.5 degrees. ● The use of specific internal manoeuvres may be appropriate where a registered paramedic has received additional training to undertake them.

Update Analysis

Care of the Newborn	This guideline has been updated. ● All babies should initially be kept warm. Skin-to-skin contact is an effective measure in keeping babies warm, and early feeding is key. ● A newborn baby will need to be transferred to hospital for the following reasons: – any baby that required resuscitation – perinatal hypoxia (APGAR score below 5). – meconium staining or aspiration – baby of a diabetic mother – small for dates/growth-restricted baby – prematurity (gestation <37 weeks) or a term baby >37 with respiratory distress syndrome/ abnormal – breathing pattern – major congenital abnormalities, even if the baby appears well at birth – red flags suggesting a high risk of early onset neonatal bacterial infection – safeguarding concerns known to the ambulance service or communicated by the maternity unit. ● Perinatal hypoxia, hypothermia, hypoglycaemia, neonatal jaundice, preterm delivery, congenital abnormalities and early onset neonatal sepsis are covered.
Haemorrhage During Pregnancy (including Miscarriage and Ectopic Pregnancy)	● A new algorithm on haemorrhage during pregnancy is included. ● Haemorrhage during pregnancy is broadly divided into two categories, occurring in early and late pregnancy. ● Haemorrhage may be revealed (evident vaginal blood loss) or concealed (little or no obvious loss). ● Practical guidance for management of pregnancy loss and fetal tissue in early pregnancy is included. ● Pregnant women may appear well even when a large amount of blood has been lost (tachycardia may not appear until 30% of circulating volume as symptoms of hypovolaemic shock occur very late, by which stage the woman is critically ill). ● Obtain venous access with large bore cannulae (16G). ● In the presence of a confirmed miscarriage, intramuscular administration of Syntometrine should be considered.
Pregnancy-induced Hypertension (including Eclampsia)	IV magnesium sulphate can be administered by paramedics for eclamptic convulsions if available to you. This would need to be given under a PGD: Patient Group Direction. Magnesium sulphate is not currently included in the JRCALC drugs section, but a review of the whole drugs section will take place next year, reviewing additional drugs that may be in common use.
Vaginal Bleeding: Gynaecological Causes	● More detail on the types and causes of vaginal bleeding is included. ● Reference is made to the sexual assault guideline. ● Photos to aid the assessment of blood loss are included. ● Following gynaecological surgical interventions, heavy, ongoing vaginal bleeding commencing 7–14 days post procedure may indicate underlying infection.
Maternal Resuscitation	● A team approach to prehospital resuscitation, definitions of maternal deaths and reversible causes of maternal collapse are covered. ● DO NOT withhold or terminate maternal resuscitation. ● ALWAYS manage pregnant women in cardiac arrest at greater than 20 weeks' gestation with manual displacement of the uterus to the maternal left. ● If resuscitation attempts fail to achieve ROSC within 5 minutes of the cardiac arrest, undertake a TIME CRITICAL transfer to the nearest ED with an obstetric unit attached. ● Place an early pre-alert to enable the ED team to summon the maternity team, as an immediate peri-mortem caesarean section (resuscitative hysterotomy) may be performed.

Newborn Life Support	● Do not place the baby in a plastic bag or polythene wrapping as there is a lack of pre-hospital evidence demonstrating the role of these in the prevention of newborn hypothermia in either significantly preterm (<32 weeks) or term infants. ● New photographs are provided.
Trauma in Pregnancy	● All trauma is significant. ● If the pregnant woman is found in cardiac arrest or develops cardiac/respiratory arrest en-route, commence advanced life support and pre-alert the nearest ED with an obstetric unit. ● Resuscitation of the woman may facilitate resuscitation of the fetus. ● Due to the physiological changes in pregnancy, signs of shock may be slow to appear following trauma, hypotension being an extremely late indication of volume loss. Signs of hypovolaemia during pregnancy are likely to indicate a 35% (class III) blood loss and must be treated aggressively. ● If sexual assault or domestic violence is suspected, consideration must be given to potential safeguarding issues and provision made to ensure safety is maintained.

Section 6

Drugs	***Addition/update of guidance***
Drugs Overview	● Paediatric drug doses are based on a child's weight, on a milligram per kilogram basis. ● When a child's weight is known, it is better to administer according to their weight rather than their age. ● When a child is clearly larger or smaller than would be expected for their age (their parents/carers will often be aware of this), an 'older' or 'younger' Page for Age chart should be selected for that child, dependent on the chart that most closely reflects their actual weight.
Atropine	Bradycardia following Return of Spontaneous Circulation (ROSC) is added as an indication for atropine.
Diazepam	● The doses have been amended and simplified. ● Confusion over 'large' and 'small' doses has been removed. ● Smaller rectal doses for patients 70 years and over are outlined. ● The full dose should be given so that convulsion recurrence is much less likely. ● The adult convulsions guideline is currently undergoing review, and recent evidence on the medicines management of convulsions will be sought, reviewed and considered.
Entonox	● Nitrous oxide may have a deleterious effect if used in patients with an air-containing closed space since nitrous oxide diffuses into such a space with a resulting increase in pressure. ● Intraocular injection of gas within the past four weeks is added as a contra-indication.
Hydrocortisone	● More emphasis on the need to administer for patients in adrenal crisis, in line with changes to altered level of consciousness and medical emergencies updates. ● Actions has been added: Glucocorticoid drug that restores blood pressure, blood sugar, cardiac synchronicity and volume. High levels are important to survive haemorrhagic shock. Therapeutic actions include suppression of inflammation and immune response. ● Contra-indications have been simplified. ● If in doubt it is better to give hydrocortisone.
Misoprostol	● Administer subligually unless the patient is unable to maintain their airway. ● The vaginal route is not appropriate in post-partum haemorrhage or for miscarriage, but rectal route may be considered when appropriate (e.g. impaired consciousness).

Naloxone Hydrochloride (Narcan)	The indication to give Naloxone to reverse respiratory and central nervous system depression in a neonate following maternal opioid use during labour has been removed. There is little evidence to support its use in neonates. If Naloxone is given to neonates born to opioid addicted mothers there are concerns that it may produce withdrawal effects. Emphasis should be on effective drying and stimulation of the baby, systematic airway management with bag valve-mask ventilation and maintaining newborn temperature between 36.50C to 37.50C. Where these interventions do not achieve established respiratory effort the newborn should be rapidly conveyed to the nearest Emergency Department with an Obstetric Unit attached. The pre-alert should detail the neonatal emergency. The newborn should be conveyed, where necessary, ahead of the mother.
Oxygen	● Decompression illness added to the high levels of supplemental oxygen for adults with critical illnesses table. ● Patients over 50 years of age who are long-term smokers with a history of exertional breathlessness and no other known cause of breathlessness should be treated as having COPD. ● Target saturation for patients with paraquat or bleomycin poisoning are 85–88%.
Paracetamol	● Dosage tables have been amended. ● Consideration is given to patients that weigh under 50kg. ● Tablets may be broken in half. ● Paracetamol is not recommended for patients with cardiac chest pain. ● Intravenous doses from birth are included. ● A new caution is added to reduce the risk of paracetamol overdose.
0.9% Sodium Chloride	● Changes to fluid regimes in trauma and sepsis are included. ● Seek advice to exceed maximum dose of fluid boluses in trauma in children.
Tranexamic Acid	● Women suffering from post-partum haemorrhage (PPH) is added as an indication. Use TXA alongside uterotonic drugs (drugs that stimulate the uterus to contract) such as syntometrine and misoprostol.
Intravascular Fluid Therapy (Adults)	● This guideline is updated alongside the sepsis guideline.