



The College of Emergency Medicine

# Clinical Standards

for

# Emergency Departments

August 2014

## **Version Control**

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Update published February 2013. Mental Health standards added.

Update published September 2013. Paracetamol overdose standards revised.

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## Introduction

The Clinical Standards for Emergency Departments (EDs) have been produced by the Clinical Effectiveness Committee of the College of Emergency Medicine. They are evidence based where possible or developed by consensus from Emergency Physicians with relevant expertise and with input from other stakeholders. The standards are reviewed annually to include any new evidence or following a review of the results of the audit programme.

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## Contents

<a href="#">Asthma</a>	p4
<a href="#">Cognitive Impairment in Older People</a>	p5
<a href="#">Dislocated Shoulder</a>	p7
<a href="#">Feverish Children</a>	p7
<a href="#">Fitting Child</a>	p8
<a href="#">Fractured Neck of Femur</a>	p9
<a href="#">Head Injury in Adults</a> (under review)	p9
<a href="#">Hand injury</a>	p10
<a href="#">Mental Health</a>	p10
<a href="#">Pain</a>	p11
<a href="#">Paracetamol Overdose</a>	p11
<a href="#">Radiology</a> (under review with Royal College of Radiologists)	p12
<a href="#">Recording of Adult Vital Signs in the Major and Resuscitation Areas of the ED</a>	p12
<a href="#">Renal Colic</a>	p13
<a href="#">Retention of Urine</a>	p13
<a href="#">Safeguarding Children</a>	p14
<a href="#">Sepsis &amp; Meningitis in Children</a>	p15
<a href="#">Severe Sepsis and Septic Shock in Adults</a>	p16
<a href="#">Spontaneous Pneumothorax in Adults</a>	p17

*Please note that certain standards are currently unchanged from the previous versions as they are still under review*

# Asthma

## Standards

1. O<sub>2</sub> prescribed on arrival to maintain O<sub>2</sub> saturation > 92%
2. Senior EM / ICU / PICU help summoned within 30min of arrival if any life threatening features present
3. Vital signs taken as per CEM standard (page 9)
4. Salbutamol or terbutaline and ipratropium given as per dosages below within 5 minutes (if Life Threatening) or 10 minutes (if Moderate or Severe) of arrival and repeated within 15 minutes of the first measurement:

<b>Drug</b>	<b>Adults</b>	<b>Children</b>
Salbutamol	5mg	2.5mg
<b>or</b> terbutaline + ipratropium	5-10 mg + 0.5mg (by nebuliser)	5mg + 0.25mg (by spacer or nebuliser)
<b>or</b> salbutamol IV	250 microgram (5mcg/kg)	N/A

5. CXR performed (if Life Threatening)
6. IV hydrocortisone or oral prednisone given as per dosages below within 60 minutes of arrival (if Life Threatening) or before leaving the ED (if Moderate or Severe)

<b>Drug</b>	<b>Adults</b>	<b>Children</b>
IV hydrocortisone	100mg	100mg (50 mg if 2 – 5 years)
<b>or</b> oral prednisone	40-50mg	30-40mg (20mg if 2 – 5 years)

7. Patients transferred to ITU / PICU they should be accompanied by a doctor (with suitable resuscitation & airway equipment) who is able to intubate the patient if necessary.
8. 90% of discharged patients to be prescribed oral prednisolone as follows:

<b>Drug</b>	<b>Adults</b>	<b>Children</b>
Oral prednisolone	30 – 50mg for 5 days	30–40 mg (> 5 years) for 3 days 20mg (2 – 5 years) for 3 days

9. Appropriate advice is given for follow up.

## References

1. [BTS/SIGN Asthma Guideline](#)

# Cognitive Impairment in Older People

## Standards

There must be documented evidence in the patient's clinical record that:

1. All patients over the age of 75 are assessed for cognitive impairment (CI) in the Emergency Department (ED).
2. Assessments for CI are done using a structured tool and the tool used is documented.
3. The findings of CI assessment are provided to the relevant admitting services for admitted patients.
4. The findings of CI assessment are provided to the patient's GP if of new onset or in the event of any deterioration.
5. Information regarding CI is provided to the patient's carers at the time of admission to hospital or discharge back to their usual place of residence unless this information was available from these sources.
6. All patients over the age of 75 have at least one Early Warning Score assessment.

## Definitions

**Standard 1:** Assessment in this context, refers to the act of objectively quantifying the cognitive state of the person.

Reason for the measure: This measure will identify patients with delirium, delirium superimposed on dementia and dementia presenting to ED. Pre-existing dementia makes older people more prone to developing delirium so they must be included in the assessment process.

**Standard 2:** A structured tool to assess CI includes:

- 4AT (The 4'A's Test)
  - 6-CIT (6 item Cognitive Impairment Test)
  - AMT-4 (Abbreviated Mental Test – 4 items)
  - AMT-10 (Abbreviated Mental Test – 10 items)
  - CAM (Confusion Assessment Method)
  - MMSE (Mini Mental State Examination)
  - MoCA (Montreal Cognitive Assessment)

If using any other tool, please provide a reference.

'Documents' means the name of the tool used and the patient's 'score' on the tool are recorded in the patient record. "Record" includes paper and electronic versions

**Standard 3:** Findings of CI assessment: a minimum subjective description of whether it is normal or abnormal; ideally the documentation would include a score using a structured tool.

'Handover' information includes at least one documentation of cognitive state as normal or abnormal with or without an objective score; information in the patient's ED records are made available to the admitting service either as a paper record (photocopy or original) or electronically or a documented evidence that a verbal handover included sharing the cognitive state. Please describe any other reasonable local handover method used.

**Standard 4:** 'Findings of CI assessment are provided to the patient's GP' includes at least the name of the tool used and the patient's score.

It is not expected that information about previously diagnosed dementia would be shared with the GP. However any changes would be expected to be conveyed to the GP, especially presentation with delirium (sudden deterioration in cognitive state corroborated by carers and/or families).

**Standard 5:** The patient record states any of the following or similar terms to clearly convey the message that the information on CI was shared with carers: "confusion", "delirium" "dementia" AND "discussed with" or "communicated to" carers.

If this information was volunteered by the carer, the patient's record will not be included for this standard.

**Standard 6:** Any tool including MEWS or NEWS will be acceptable. The total early warning score has to be documented.

## References

1. 'The Silver Book': Quality Care for Older People with Urgent and Emergency Care Needs (Multiple, June 2012).
2. NICE guideline: delirium CG103 (July 2010)
3. NICE Quality Standard: Delirium QS63 (July 2014)
4. Cei M, Bartolomei C, Mumoli N. In-hospital mortality and morbidity of elderly medical patients can be predicted at admission by the Modified Early Warning Score: a prospective study. *Int J Clin Pract*, April 2009, 63, 4, 591–595 doi: 10.1111/j.1742-1241.2008.01986.x
5. Counting the cost: Caring for people with dementia on hospital wards. Alzheimer's Society, 2009.
6. Ferguson C, Woodard J, Banerjee J, Conroy S. Operationalising frailty definitions in the emergency department - a mapping exercise. *Age Ageing* 2010; 39(S1):i7. (Accessed May 29, 2014)
7. Dalziel B. Dementia subtypes and their prevalence: latest thoughts. *Geriatr Aging*. 2007;10:12.
8. Fong T, Tulebaev SR & Inouye SK. Delirium in elderly adults: diagnosis, prevention and treatment. *Nat Rev Neurol*. Apr 2009; 5(4): 210-220.
9. Hustey FM, Meldon SW, Smith MD, et al. The effect of mental status screening on the care of elderly emergency department patients. *Annals Emerg Med*. 2003 May; 41(5):678–84.
10. Suffelitto B, Miller T, Frisch A, Callaway C. Emergency physician recognition of delirium (2013). *Postgrad Med J* doi:10.1136/postgradmedj-2012-131608

11. Wanless, D. Securing good care for older people (2006). The Kings Fund. (Accessed May 29, 2014)

## Dislocated Shoulder

### Standards

1. Pain managed as per CEM standard (page 8)
2. X-ray within 60 minutes of arrival – 75%
3. 75% - 1<sup>st</sup> attempt at reduction within 2 hours and 90% within 3 hours of arrival
4. The name, dose and time of administration of sedation drug documented
5. Post-reduction X-Ray and result of review documented in the notes
6. Follow up arrangements documented (or the reasons why no follow-up necessary)

### References

These standards are consensus based

## Feverish Children

### Introduction

- These standards are derived from the NICE guideline "Feverish illness in children: Assessment and initial management in children younger than 5 years"<sup>1</sup>, which provides a tool to risk assess feverish children for serious bacterial illness
- The Traffic Light System<sup>2</sup> is recommended for use in EDs
- An adequate 'safety net' is defined as
  - a) providing the parent or carer with verbal and/or written advice on warning symptoms and how further care can be accessed **or**
  - b) the parent or carer is given follow up at a specific time and place **or**
  - c) ensuring direct access for the patient if further assessment is required.

### Standards

1. Children presenting to Emergency Departments (EDs) with medical conditions should have respiratory rate, oxygen saturation, pulse, blood pressure/capillary refill, GCS/AVPU and temperature measured and recorded as part of the routine assessment
2. Discharged children in whom no diagnosis is found and with amber features, as defined in the NICE guideline, should be provided with an appropriate 'safety net'
3. 90% of children with amber features and without an apparent source of infection should not be prescribed antibiotics
4. Children with fever and without an apparent source of infection but with one or more red features should have FBC, CRP, blood culture and urinalysis performed
5. EDs should have written advice to give to the carer/s of discharged children
6. EDs should have access to the NICE guideline Traffic Light System.

### References

1. *Feverish illness in children - Assessment and initial management in children younger than 5 years*, National Collaborating Centre for Women's and Children's Health

## Fitting Child

### Standards

1. Manage all fitting children as per APLS or EPLS algorithm<sup>1</sup> (exceptions: children with known history of seizures and a written management plan)
2. Take a careful eyewitness history to ascertain possible cause and document in the patient's clinical record
3. Check blood glucose and document in the patient's clinical record
4. Parent information leaflets should be given to parents/carers providing clear safety net advice for all children discharged from the ED.

### Definitions

**Standard 1** – for the purposes of the audit 'fitting child' means any child under the age of 16 presenting with or following a fit, convulsion or seizure. All presentations below should be included:

- *Seizure* - paroxysmal disturbance of brain function (motor, sensory, autonomic or cognitive) that may be epileptic, or non epileptic
- *Epileptic seizure* - occurrence of signs and/or symptoms of abnormal excessive hypersynchronous activity in the brain
- *Non-epileptic seizure* - seizure occurring due to non epileptic causes e.g. syncope, reflex anoxic seizures, breath holding attacks, cardiac arrhythmias, raised ICP
- *Acute symptomatic seizure* - seizure secondary to metabolic or electrolyte disturbances, intracranial infections, intracranial haemorrhage, tumour, ingestions
- *Febrile seizure* - seizure in presence of fever  $\geq 37.8$  C or features in history or examination indicative of febrile seizure
- *Epilepsy* - recurrence of epileptic seizures.

Exceptions: If the child has a known history and has a written management plan then that patient should not be included in the audit. If it is unclear whether the patient had a personal written management plan when they presented please include in the audit.

**Standard 2** – An eyewitness to the seizure should be contacted to ascertain:

- the conscious level prior to the seizure
- the duration of the seizure
- whether the seizure was focal or generalised
- the time taken to recover
- the state of the child afterwards.<sup>2</sup>

**Standard 3** – Measuring blood glucose must be done in all cases. If it was measured pre-hospital by an ambulance crew the result must be recorded in the ED notes.

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<sup>1</sup> Advanced paediatric life support (ALSG, 5th edition)

<sup>2</sup> NICE Clinical Knowledge Summary (updated October 2013)

**Standard 4** – Parents or carers of children discharged from the ED should be provided with written information that includes:

- information about the type of seizure experienced
- the likelihood of recurrence
- what steps to be taken by carers in the event of a recurrence
- contact details for where carers can seek help in the event of a recurrence.

Exceptions: if the patient has a history of seizures with a diagnosed condition and has already received written advice on the type of seizure experienced.

### References

1. <sup>1</sup> Baumer JH Arch Dis Child 2004; 89: 278-280 Evidence based guideline for post seizure management in children presenting acutely to secondary care.
2. <sup>1</sup> The epilepsies: the diagnosis and management of the epilepsies in adults and children in primary and secondary care, NICE CG137, Jan 2012
3. <sup>1</sup> Transient loss of consciousness ('blackouts') management in adults and young people (NICE CG109, Aug 2010)
4. <sup>1</sup> Advanced paediatric life support (ALSG, 5th edition)
5. <sup>1</sup> NICE Clinical Knowledge Summary (updated October 2013)

## Fractured Neck of Femur

### Standards

1. Pain managed as per CEM standard (page 8)
2. 90% - X-ray within 60 minutes of arrival
3. 75% - confirmed #NOF referred within 120min of arrival, with the referral time in the notes
4. Admitted within 4 hours of arrival.

### References

1. [Hip Fractures clinical guideline \(NICE, CG124, June 2012\)](#)
2. [National hip fracture audit](#)

## Head Injury in Adults (Under review)

### Standards

1. Assessed for features of high risk brain and/or cervical spine injury by an ED clinician within 15 minutes of arrival
2. Discharged patients – 90% should receive written head injury advice
3. Re-attending within 72hrs with symptoms relating to the initial head injury – 90% seen by a senior clinician
4. CT imaging – 90% performed within 1hr of the radiology department receiving the request or within 1hr of a mutually agreed time for the scan to be performed
5. CT imaging – 90% reported by an appropriately qualified person within 1 hour of completion of the scan
6. GCS < 13 – CT cervical spine done at the same time
7. EDs should have clear, agreed and written protocols for referral and transfer to a neurosurgical centre

8. Observations on patients admitted are GCS, pupil size and reactivity, limb movements, respiratory rate, heart rate, and blood pressure
9. GCS < 15 – observations recorded every 30 minutes until GCS is 15
10. Admitted patients – minimum frequency of observations is:
  - half-hourly for 2 hours,
  - then 1 hourly for 4 hours,
  - then 2 hourly thereafter.

### References

1. [Head Injury clinical guideline \(NICE, CG56, Sept 2007\)](#)

## Hand Injury

### Standards

1. Pain was managed as per CEM standard (page 5)
2. Dominant hand documented
3. Mechanism of injury documented
4. Documented evidence that tendon injury was excluded
5. Documented evidence that nerve injury was excluded

### References

1. These standards are consensus based

## Mental Health

### Standards

1. Patients who have self-harmed should have a risk assessment in the ED
2. Previous mental health issues should be documented in the patient's clinical record
3. A Mental State Examination (MSE) should be recorded in the patient's clinical record
4. The provisional diagnosis should be documented in the patient's clinical record
5. Details of any referral or follow-up arrangements should be documented in the patient's clinical record
6. From the time of referral, a member of the mental health team will see the patient within 1 hour
7. An appropriate facility is available for the assessment of mental health patients in the ED

### References

1. These standards are consensus based
2. For further information see *CEM Mental Health in EDs: A toolkit for improving care*: <https://secure.collemergencymed.ac.uk/code/document.asp?ID=6883>

## Pain

### Standards

1. Patients in severe pain (pain score 7 to 10) or moderate pain (pain score 4 to 6) receive appropriate analgesia, according to local guidelines or [CEM pain guidelines](#),
  - a. 75% within 30min of arrival
  - b. 100% within 60min of arrival
2. PGDs in place for nurse prescribing on arrival
3. Patients with severe pain or moderate pain – 90% should have documented evidence of re-evaluation and action within 120 minutes of the first dose of analgesic
4. If analgesia is not prescribed and the patient has moderate or severe pain the reason should be documented in the notes.

### References

1. These standards are consensus based

## Paracetamol Overdose

### Standards (All patients)

1. Plasma levels should be **not** measured earlier than 4 hours after the estimated ingestion time
2. Staggered overdoses - treatment started within one hour of arrival
3. Patients arriving < 8 hours after ingestion - treatment given as per the 2012 MHRA guideline.
4. Patients arriving 8 to 24 hours after ingestion - treatment started before blood results available if there is a clear history of > 6 g ingestion (or 75 mg/kg whichever is the smaller).
5. Patients presenting > 24 hours. INR, urea and electrolytes bicarbonate & LFTs performed and recorded in the notes.

### Additional paediatric standards

6. Plasma levels should **not** be taken if there is a clear history of < 75mg/kg in an accidental ingestion
7. Documented evidence that child protection was considered and acted upon.
8. All deliberate overdose patients should have levels measured and referred to Child and Adolescent Mental Health Services (CAMHS) according to the local policy

### References

1. [MHRA](#)
2. [National Poisons Information Service \(Toxbase\)](#) and [Paracetamol Poisoning Assessment](#)

## Radiology (under review)

### Standards

1. The Emergency Department (ED) should have a clear and transparent system of monitoring, recording and following up 'missed' X-rays and actions taken
2. Appropriate action should be taken by the ED within 24 hours of receiving the report.

### References

1. Royal College of Radiologists [Standards for providing a 24-hour diagnostic radiology service](#) (2009)

## Recording of Adult Vital Signs in the Major and Resuscitation Areas of the Emergency Department

### Standards

1. Patients triaged to the majors or resuscitation areas of the ED should have respiratory rate, oxygen saturation, pulse, blood pressure, GCS or AVPU score and temperature measured and recorded in the notes within 15 minutes of arrival or triage\*
2. Patients with abnormal vital signs should have their vital signs repeated and recorded in the notes within 60 minutes of the first set of observations\*

The following criteria may be used to define abnormal vital signs in adults which should be acted on if local guidelines are not available:

- a) Respiratory rate < 10 **or** > 20 per min
  - b) Oxygen saturation < 92%
  - c) Pulse < 60 **or** > 100
  - d) Systolic blood pressure < 100 **or** > 180
  - e) GCS < 15 or less than Alert on AVPU
  - f) Temperature < 35 **or** > 38
  - g) MEWS score  $\geq 2$  = "abnormal parameters"
3. Abnormal vital signs should be communicated to the nurse in charge of that clinical area and documented in the notes
  4. There should be documented evidence that appropriate action was taken.

\*These standards are applicable across all CEM clinical standards unless specifically stated. For life threatening asthma, vital signs should be measured on arrival and repeated within 15 minutes.

### References

1. These standards are consensus based and have been developed in conjunction with the following organisations:



## Renal Colic in Adults

### Standards

1. Pain managed as per CEM standard (page 8)
2. Dipstick urinalysis performed and result recorded in the notes
3. Patients should be considered for a locally agreed radiological investigation<sup>1</sup>, with the action plan documented in the notes
4. FBC & renal function performed and the results recorded in the notes
5. Patients over 50 should have AAA excluded by appropriate investigation<sup>1</sup>
6. Outpatient review, GP follow up or speciality referral should be made in accordance with local policy.

<sup>1</sup> This should be the radiological investigation normally performed as per local guidelines. The College considers CTKUB to be best practice for radiological investigations of renal colic

### References

1. These standards are consensus based

## Retention of Urine in Adults

### Standards

1. Pain managed as per CEM standard
2. 90% catheterised within 1 hour of arrival
3. 100% catheterised within 2 hours of arrival
4. Antibiotic prescribed according to local guideline before leaving the department.
5. Size 16 Fr or less used for primary retention in males
6. Residual volume recorded in the notes
7. Renal function measured and recorded in the notes
8. Outpatient review or speciality referral made in accordance with local policy.

### References

1. These standards are consensus based

# Safeguarding Children

## Definitions

- Long bone fracture = humerus, radius, ulna, femur, tibia & fibula (long bone fracture does not include elbow, wrist, knee or ankle)
- 'Red' patients should be referred directly for senior Paediatric opinion  
'Yellow' patients should have a senior EM opinion and then be referred to the ED Liaison Health Visitor the next working day
- Senior doctor/opinion = ST4 (or equivalent) and above
- 'Frequent attender' = a child who has attended more than 3 times in the past year with different conditions.

## Standards

1. All ED medical and nursing staff should, as a minimum, have level 2 Child Protection training. All senior EM doctors (ST4 or equivalent and above) should have level 3 Child Protection training
2. EDs should have access to a senior Paediatric and senior EM opinion 24 hours a day for child welfare issues
3. EDs should have an IT system, which identifies previous attendances in the last 12 months, which is visible on ED notes
4. EDs should notify the local Safeguarding Children Services (as per local guidelines) of all children who have attended more than 3 times in the past year with different conditions within 5 days of the most recent attendance
5. EDs should notify all child ED attendances (<16 years) to both the GP and the Health Visitor/School Nurse (or other appropriate service as per local guidelines), giving the date and the diagnosis as a minimum
6. Skull or long bone fractures in children < 1 year old should be discussed with senior Paediatric or senior EM doctor during their ED attendance
7. EDs should document on ED notes whether or not patients <16 years of age have a named social worker

## References

1. [Safeguarding Children and Young People: roles and competencies for healthcare staff](#) (Intercollegiate, September 2010)
2. [Standards for Children and Young People in Emergency Care Settings](#) (RCPCH, June 2012)

# Severe Sepsis and Septic Shock in Adults

## Definitions

- Severe sepsis = The presence of one or more organ system dysfunctions in the context of sepsis defines severe sepsis
- Septic Shock = Patients who have evidence of hypoperfusion (high lactate) or a persistently low blood pressure after initial fluid resuscitation have septic shock
- Senior doctor = ST4 (or equivalent) and above

## Standards

1. Temperature, pulse rate, respiratory rate, blood pressure, mental status (AVPU or GCS) and capillary blood glucose on arrival
2. Senior EM assessment of patient within 60mins of arrival
3. High flow O<sub>2</sub> via non-re-breathe mask was initiated (unless there is a documented reason to the contrary) before leaving the ED
4. Serum lactate measured before leaving the ED
5. Blood cultures obtained before leaving the ED
6. Fluids - first intravenous crystalloid fluid bolus (up to 20mls/kg given):
  - 75% within 1 hour of arrival
  - 100% before leaving the ED
7. Antibiotics administered
  - 50% within 1 hour of arrival
  - 100% before leaving the ED
8. Urine output measurements instituted before leaving the ED.

## References

1. [Sepsis Six](#) Survive Sepsis, 2009

# Sepsis and Meningitis in Children

## Introduction

- These standards are designed for use with the College guideline for the management of paediatric sepsis and meningitis
- The standards & guideline are derived from the NICE guidelines "*Bacterial meningitis and meningococcal septicaemia: management of bacterial meningitis and meningococcal septicaemia in children and young people younger than 16 years in primary and secondary care*" **and** "*Feverish illness in children: Assessment and initial management in children younger than 5 years*".

## Standards

1. Reviewed by a senior EM or paediatric clinician within 30min of arrival
2. IV antibiotics given within 1hr of arrival
3. Fluid bolus of 20ml/kg normal saline given within 1hr of arrival (if shock present on initial assessment)
4. Documented assessment of response and further bolus given as per NICE guideline
5. Shocked children discussed with the local senior paediatrician and intensivist and considered for transfer to PICU.

## Notes

1. Time to initial assessment is based on a 15min target for triage and being identified as unwell (Category 2 or above on the National triage scale)
2. The standards for fluid boluses and antibiotics are derived from the NICE guidelines and also the CEM standards on the management of severe sepsis and septic shock in adults (see page 12).

## References

1. NICE guideline: Bacterial meningitis and meningococcal septicaemia (CG102, June 2010) <http://guidance.nice.org.uk/CG102>
2. NICE guideline: Feverish illness in children (CG47, May 2007) <http://guidance.nice.org.uk/CG47>
3. CEM standards: Severe sepsis & Septic shock in Adults ([see page 12](#))

# Spontaneous Pneumothorax in Adults

## Definitions

1. **Primary pneumothorax** occurs in patients who have no clinically apparent lung disorder
2. **Small pneumothorax:** presence of a visible rim of <2 cm between the lung margin and the chest wall at the level of the hilum.
3. **Large pneumothorax** presence of a visible rim of >2 cm between the lung margin and the chest wall at the level of the hilum.

## General Standards

1. Follow up – 90% according to local policy
2. Written advice – given to 90% on discharge.

## Standards

### A) Primary Spontaneous Pneumothorax - minimal symptoms

#### **Small pneumothorax**

1. Simple chest aspiration should not be performed.

#### **Large pneumothorax**

1. Patients should be treated with simple aspiration
2. Patients should have a repeat CXR before discharge.

### B) Primary Spontaneous Pneumothorax - symptomatic

1. Patients should be treated with simple chest aspiration
2. Patients should have an intercostal drain if aspiration fails
3. 90% of patients should have an intercostal drain of < 14 Gauge.

## References

1. [BTS Pleural Disease Guidelines \(2010\)](#)

**Review August 2015**

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