

Slide 1



Time needed- 3mins for 1st 3 slides
Review Instructor notes for each slide

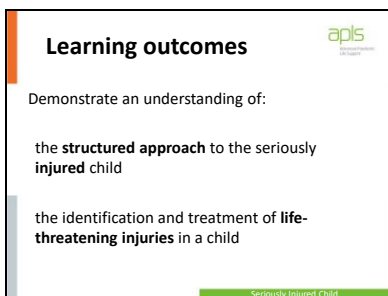
50 minutes – interactive session – with whole candidate group
Requirements

- 4 assistant instructors with appropriate prompting materials needed. One for each group.
- Powerpoint slide set
- Handouts to groups
 - Pencils
 - Activity 1 and 2 on A3
 - Activity 3 on A3

Environment/Set

- Allow candidates to get themselves into 4 groups
- One instructor allocated per group

Slide 2

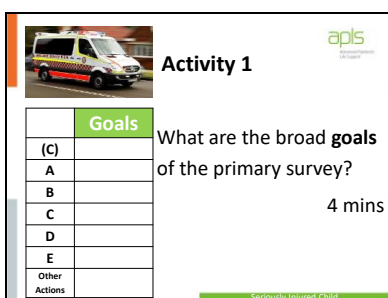


Read as on slide

Slide 3

Read as on slide
Time 03mins (Time 03 mins at completion)

Slide 4



Activity 1 – Goals of the Primary Survey

Time needed 04 mins (Running time 7 mins at completion)

4 min breakout
Small group activity

Handout proforma – Activity 1

Tell the groups to write on the A3

Read the following

'List the goals of each component of the structured approach of the primary survey'

A facilitator is allocated to assist

Start the groups at different places. This ensures all areas are covered well. They have to listen though as the area they are allocated next will be different

They should try and get through all goals but will be responsible for reporting back on the one they started on

Allocate 1st group start with A, 2nd Group B, 3rd group C, 4th group D/E/Other. 1 facilitator per group with 4 slide handout to keep group on track.

- **Activity 1 – Primary Survey Goals**
 - Review the goals of each component of the structured approach
 - *This section is not about specific diagnoses – but rather the broad physiologic goals*
- Bring groups back together for plenary discussion with the next slide

Slide 5

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	
C	
D	
E	
Rx	

Start at 7 min

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly

After group has presented display 'correct response'

Slide 6

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	Maintain oxygenation Maintain ventilation
C	
D	
E	
Rx	

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly

After group has presented display 'correct response'

Slide 7

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	Maintain oxygenation Maintain ventilation
C	Assess for shock Seek & control haemorrhage Restore & maintain perfusion
D	
E	
Rx	

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly

After group has presented display 'correct response'

Slide 8

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	Maintain oxygenation Maintain ventilation
C	Assess for shock Seek & control haemorrhage Restore & maintain perfusion
D	Identify neurological injury Prevent secondary insult
E	
Rx	

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly

After group has presented display 'correct response'

Slide 9

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	Maintain oxygenation Maintain ventilation
C	Assess for shock Seek & control haemorrhage Restore & maintain perfusion
D	Identify neurological injury Prevent secondary insult
E	Identify other threats to life & limb Extremities, exposure but maintain environment & euglycaemia
Rx	

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly

After group has presented display 'correct response'

Slide 10

Goals of primary survey	
(C)	Control catastrophic external haemorrhage
A	Maintain and protect airway patency Minimise unnecessary cervical spine movement
B	Maintain oxygenation Maintain ventilation
C	Assess for shock Seek & control haemorrhage Restore & maintain perfusion
D	Identify neurological injury Prevent secondary insult
E	Identify other threats to life & limb Extremities, exposure but maintain environment & euglycaemia
Rx	Expedite definitive treatment, transfer Limit suffering

Time needed 5mins to complete this exercise (Running time 12 mins at completion)

As per slide

Each group has a representative speak loudly and clearly
After group has presented display 'correct response'

Slide 11

Paul's case

Paul is a 13 year old boy (40kg) who was climbing a tree in his own garden, which overhung the street.

His mother was out shopping and on her return, she found that he had fallen from the tree, onto a low garden wall, and then onto the pavement.

He could not stand up and she called an ambulance.



Start at 12 min-

Time needed 2 mins for next 2 slides (Running time 14 mins at completion)

The initial presentation of the case is now relayed to the candidates over the next two slides.

This is your typical prehospital notification which is brief but not comprehensive.

The groups will now think about how they prepare their environment for this patient reception based on the likely injuries to each area of the primary survey

Slide 12

Activity 2: En route Paul 13yo, 40Kg

In pain, bruised left forehead with left chest and abdominal pain

RR ~38/min, SpO₂ 98%

HR 140/min, BP 140/75

CRT 3 sec, GCS 14, given IN fentanyl

What preparation is needed to address his potential injuries?

6 mins

	Prep
(C)	
A	
B	
C	
D	
E	
Rx	

Time 2 mins (Running time 14 mins at completion)

Activity 2 – prehospital info preparation

Candidates will work through this case, using a structured approach, discuss in their groups the likely injuries, preparation for these.

Time needed 6 mins for activity (Running time 20 mins at completion)

Allocate groups different starting points. . This ensures all areas are covered well. They have to listen though as the area they allocated next will be different

They should try and get through all goals but will be responsible for reporting back on the one they started on.

Works best going anticlockwise or right to left, so that Group 4 get A (had D/E) , Group 1 now get B (had A), group 2 get C (had B), , group 3 get D/E/Other (had C),

This way each group is moving down the primary survey rather than backward, and once reaching the end start at the beginning again.

That is once they have finished E they'll be dealing with A next.

1 facilitator per group with 4 slide handout to keep group on track.

Activity 2 – Preparations

- groups should list the specific preparations for the likely injury

Slide
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Activity 2 Pre arrival preparation	
(C)	Stop exsanguinating haemorrhage - compression, suture, binder
A	Airway equipment Minimise unnecessary neck movement
B	
C	
D	
E	
Rx	

Activity 1B – Prehospital preparation

Start at 20 min - Time needed 8 mins for feedback (Running time 28 mins at completion)

A – important to stress that haemoglobin is responsible for 95% oxygen carriage. As trauma patients may be losing haemoglobin, oxygen is imperative to allow dissolved oxygen, PO₂, to carry oxygen to the tissues in the absence of haemoglobin. Manipulation of the airway, particularly in the obtunded patient, should respect the possibility of an occult or unstable neck injury, and so unnecessary neck movement should be minimised

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Activity 2 Pre arrival preparation	
(C)	Stop exsanguinating haemorrhage - compression, suture, binder
A	Airway equipment Minimise unnecessary neck movement
B	ICC for tension pneumothorax, massive haemothorax, open pneumothorax, ventilation for flail chest/lung contusion, CXR
C	
D	
E	
Rx	

Activity 1B – Prehospital preparation

Time needed 8 mins for feedback (Running time 28 mins at completion)

B – with the history of blunt trauma and left chest pain any of these conditions are possible. Preparation for how to clinically detect these conditions, with the aid of chest x-ray, and how to rapidly manage, need to be prepared for.

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Activity 2 Pre arrival preparation	
(C)	Stop exsanguinating haemorrhage - compression, suture, binder
A	Airway equipment Minimise unnecessary neck movement
B	ICC for tension pneumothorax, massive haemothorax, open pneumothorax, ventilation for flail chest/lung contusion, CXR
C	IVC x2, warmed IV crystalloid 10 mL/kg +/- 5mL/kg O-ve blood, tranexamic acid, massive transfusion protocol, FAST, pelvic X-ray
D	
E	
Rx	

Activity 1B – Prehospital preparation

Time needed 8 mins for feedback (Running time 28 mins at completion)

C - C – ABC – the focus is on detecting and stopping exsanguinated blood loss. Systematic approach to how to look for areas of declared as well as occult blood loss need to be thought about, as well as the utility of chest x-ray, pelvic x-ray, FAST scan. Areas of active bleeding should be managed with direct compression bandaging, suturing, reduction of fractures, pelvic binding.

Large bore IV access is needed. Circulating blood volume should be maintained, with infusion of warmed fluid.

The choice of resuscitation fluid is dependent on multiple variables including the presence of shock, estimated starting haemoglobin, the detectable areas of active bleeding and whether there is ongoing bleeding or not, and the response to initial fluid resuscitation. TXA helps decrease clot dissolution which contributes to acute traumatic coagulopathy. MTP is reserved for those requiring large volumes of blood or who are shocked at any stage.

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Activity 2
Pre arrival preparation

(C) Stop exsanguinating haemorrhage - compression, suture, binder

A Airway equipment
Minimise unnecessary neck movement

B ICC for tension pneumothorax, massive haemothorax, open pneumothorax, ventilation for flail chest/lung contusion, CXR

C IVC x2, warmed IV crystalloid 10 ml/kg +/- 5ml/kg O-ve blood, tranexamic acid, massive transfusion protocol, FAST, pelvic X-ray

D Rapid neurological assessment, AVPU or GCS, pupils, limb movement, secondary brain and spinal protection – avoid hypotension, hypoxia

E

Rx

Seriously Injured Child

Activity 1B – Prehospital preparation

Time needed 8 mins for feedback (Running time 28 mins at completion)

D- A crude but important neurological assessment is necessary. Progress of neurological status needs to be observed. Factors that aggravate primary brain injury result in secondary brain injury. The major focus is avoiding hypotension and hypoxia. But hypercarbia, hyper/hypoglycaemia, hyperthermia, acidosis, hyponatraemia, seizures all need to be optimised to prevent this occurring.

Slide 17

Activity 2
Pre arrival preparation

(C) Stop exsanguinating haemorrhage - compression, suture, binder

A Airway equipment
Minimise unnecessary neck movement

B ICC for tension pneumothorax, massive haemothorax, open pneumothorax, ventilation for flail chest/lung contusion, CXR

C IVC x2, warmed IV crystalloid 10 ml/kg +/- 5ml/kg O-ve blood, tranexamic acid, massive transfusion protocol, FAST, pelvic X-ray

D Rapid neurological assessment, AVPU or GCS, pupils, limb movement, secondary brain and spinal protection – avoid hypotension, hypoxia

E Extremity review, exposure – log roll to assess posterior and thoracolumbar spine
Environment – keep warm & check BGL

Rx

Seriously Injured Child

Activity 1B – Prehospital preparation

Time needed 8 mins for feedback (Running time 28 mins at completion)

E – exposure and a thorough examination of the posterior aspect and extremities of the patient is critical to not missing injuries. Remembering that heat loss needs to be minimised.

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Activity 2
Pre arrival preparation

(C) Stop exsanguinating haemorrhage - compression, suture, binder

A Airway equipment
Minimise unnecessary neck movement

B ICC for tension pneumothorax, massive haemothorax, open pneumothorax, ventilation for flail chest/lung contusion, CXR

C IVC x2, warmed IV crystalloid 10 ml/kg +/- 5ml/kg O-ve blood, tranexamic acid, massive transfusion protocol, FAST, pelvic X-ray

D Rapid neurological assessment, AVPU or GCS, pupils, limb movement, secondary brain and spinal protection – avoid hypotension, hypoxia

E Extremity review, exposure – log roll to assess posterior and thoracolumbar spine
Environment – keep warm & check BGL

Rx Trauma page, blood, trauma imaging, consider analgesia, O-ve blood, Notify surgeon, anaesthetist, telemedicine, inter-facility transfer?

Seriously Injured Child

Activity 1B – Prehospital preparation

Time needed 8 mins for feedback (Running time 28 mins at completion)

Rx - Other actions – the patient’s mechanism of injury and initial descriptions of injuries and vital signs would recommend the presence of trauma team on arrival. As well as this notification of relevant complimentary services such as radiology, Blood Bank, surgical team, anaesthetic and intensive care team would be appropriate depending on the facility.

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Activity 3:
Progress on arrival (7min)

(C) Nil

A groaning, gurgling secretions

B SpO₂ 94% non-rebreather bag, RR 40/min
Decreased A/E, left chest, hyperresonant and tender

C Pale, cold & clammy
pulse thready, HR 155/min
BP 90/ systolic, CRT 6 sec

D Confused conversation, occasionally combative, GCS 10, left pupil dilated

E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

Seriously Injured Child

Activity 3 – Diagnoses & further Actions

Time needed 2 mins for this slide (Running time 30 mins at completion)

Start at 28 min-

Time needed 2 mins for this slide (Running time 30 mins at completion)

Read the following

‘Pt now arrives. A number of features of his primary survey have progressed.

Utilise the next seven minutes to consider his latest primary survey injury status and the associated treatment or intervention required.

Both areas of activity 3 need to be filled out on the A3 forms for this exercise. You have 7 minutes’

Time needed 7 mins for activity (Running time 37 mins at completion)

Start the groups at different places. This ensures all areas are covered well.

They should try and get through all goals but will be responsible for reporting back on the one they started on. Works best going anticlockwise or right to left, so that Group 4 get B (had A) , Group 1 now get C (had B), group 2 get D/E/Other (had C), group 3 get A (had D/E/Other), This way each group is moving down the primary survey rather than backward, and once reaching the end start at the beginning again.

That is once they have finished E they'll be dealing with A next.

1 facilitator per group with 4 slide handout to keep group on track.

Activity 3 – Diagnoses & further Actions

Time needed 2 mins for this slide (Running time 30 mins at completion)

Start at 28 min-

Time needed 2 mins for this slide (Running time 30 mins at completion)

Read the following

'Pt now arrives. A number of features of his primary survey have progressed.

Utilise the next seven minutes to consider his latest primary survey injury status and the associated treatment or intervention required.

Both areas of activity 3 need to be filled out on the A3 forms for this exercise. You have 7 minutes'

Time 7 mins (Time 37 mins at completion)

Time needed 7 mins for activity (Running time 37 mins at completion)

Start the groups at different places. This ensures all areas are covered well.

They should try and get through all goals but will be responsible for reporting back on the one they started on. Works best going anticlockwise or right to left, so that Group 4 get B (had A) , Group 1 now get C (had B), group 2 get D/E/Other (had C), group 3 get A (had D/E/Other), This way each group is moving down the primary survey rather than backward, and once reaching the end start at the beginning again.

That is once they have finished E they'll be dealing with A next.

1 facilitator per group with 4 slide handout to keep group on track.

Slide 20

Activity 3:
What are the diagnoses and treatment/investigations?

	Dx	Rx/tx
(C)		
A		
B		
C		
D		
E		
Other		

(C) Nil
 A groaning, gurgling secretions
 B SpO₂ 94% non-rebreather bag RR 40/min
 Decreased A/E, left chest, hyperresonant and tender
 C Pale, cold & clammy
 pulse thready, HR 155/min
 BP 90/ systolic, CRT 6 sec
 D Confused conversation, occasionally combative, GCS 10, left pupil dilated
 E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Seriously Injured Child

Slide 21

Activity 3 – Diagnoses & further Actions 'Lets start with A' - Refresher whilst group give answers over next 2 slides. Let them give answer before showing answer. Time needed 2 mins for this and next 2 slides (Running time 39 mins at completion)

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

A

- (C) Nil
- A groaning, gurgling secretions
- B SpO₂ 94% non-rebreather bag RR 40/min Decreased A/E, left chest, hyperresonant and tender
- C Pale, cold & clammy pulse thready, HR 155/min BP 90/ systolic, CRT 6 sec
- D Confused conversation, occasionally combative, GCS 10, left pupil dilated
- E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Slide 22

Re-assessment - Possible diagnoses

(C)	
A	Airway threatened, may become obstructed secondary to diminished LOC (closed head injury, opiates, shock)
B	
C	
D	
E	

A – likely issues

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Treatment and investigation

(C)	
A	HFO NRB, suction, OPA ? NPA maintain cspine immobilization – BVM, prepare for RSI
B	
C	
D	
E	

A – likely intervention. Talk about MILS with intubation. Avoidance of NPA with facial fractures but not if no evidence of such.

Slide 24

Activity 3 – Diagnoses & further Actions. 'Lets talk about B' Refresher whilst group give answers over next 2 slides. Let them give answer before showing answer. Time needed 2 mins for this and next 2 slides (Running time 41 mins at completion)

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

B

- (C) Nil
- A groaning, gurgling secretions
- B SpO₂ 94% non-rebreather bag RR 40/min Decreased A/E, left chest, hyperresonant and tender
- C Pale, cold & clammy pulse thready, HR 155/min BP 90/ systolic, CRT 6 sec
- D Confused conversation, occasionally combative, GCS 10, left pupil dilated
- E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Activity 3 – Diagnoses & further Actions. 'Lets talk about B' Refresher whilst group give answers over next 2 slides. Let them give answer before showing answer. Time needed 2 mins for this and next 2 slides (Running time 41 mins at completion)

Slide 25

Re-assessment - Possible diagnoses

(C)	
A	Airway threatened, may become obstructed secondary to diminished LOC (CHI, opiates, shock)
B	Tension pneumothorax Massive haemothorax Flail chest & pulmonary contusions ? Diaphragmatic hernia
C	
D	
E	

B – likely DDx for decreased A/E

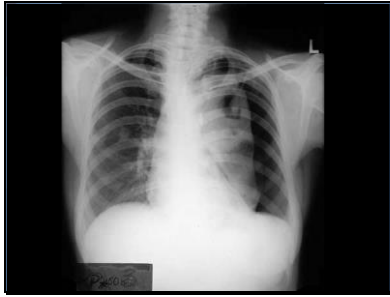
Slide 26

Treatment and investigation

(C)	
A	HFO NRB, suction, OPA ? NPA maintain C-spine immobilization – BVM, prepare for RSI
B	Left ICC – before or after RSI? CXR before/after?
C	
D	
E	

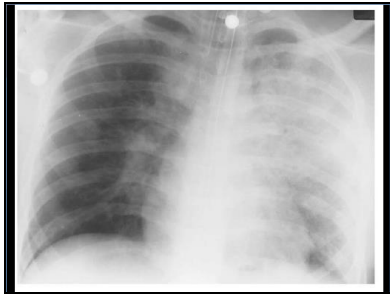
B – indications for ICC. CXR before if sats > 90% and not shocked or tension Ptx. CXR may reveal contusion or traumatic diaphragmatic hernia that doesn't need ICC. If A needs intubation, what is timing for ICC ? Before or after intubation. With preparation for tension Ptx, better to do once intubated.

Slide 27



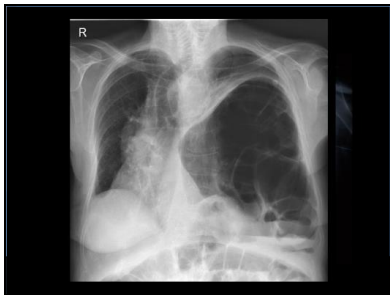
CXR DDx for decreased air entry – not all need ICC
Pneumothorax

Slide 28



CXR DDx for decreased air entry – not all need ICC
Lung contusion

Slide 29



CXR DDx for decreased air entry – not all need ICC
Traumatic diaphragmatic hernia

Slide 30

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

C

(C) Nil

A groaning, gurgling secretions

B SpO₂ 94% non-rebreather bag, RR 40/min
Decreased A/E, left chest, hyperresonant and tender

C Pale, cold & clammy
pulse thready, HR 155/min
BP 90/ systolic, CRT 6 sec

D Confused conversation, occasionally combative, GCS 10, left pupil dilated

E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Seriously Injured Child

Start at 41 mins

Activity 3 – Diagnoses & further Actions. ‘Lets talk about C’
Refresher whilst group give answers over next 2 slides
Let them give answer before showing answer
Time needed 2 mins for this and next 2 slides (Running time 43 mins at completion)

Slide 31

Re-assessment - Possible diagnoses

(C)

A Airway threatened, may become obstructed secondary to diminished LOC (closed head injury, opiates, shock)

B Tension pneumothorax
Massive haemothorax
Flail chest & pulmonary contusions
? Diaphragmatic hernia

C Intra peritoneal haemorrhage – ruptured spleen
Retro-peritoneal haemorrhage – pelvis +/- kidney
Cardiac tamponade/contusion. BP 90 systolic = large blood loss

D

E

Seriously Injured Child

C – likely Dx if tachycardia = bleeding. If BP low = significant bleeding. Need to search for blood loss.

Slide 32

Treatment and investigation

(C)

A HFO NRB, suction, OPA ? NPA maintain C-spine immobilization – BVM, prepare for RSI

B Left ICC – before or after RSI? CXR before/after?

C Pelvic binder + Xray, FAST, 10mL/kg warmed blood, 10mL/kg crystalloid until available, Tranexamic acid. Surgeon needed

D

E

Seriously Injured Child

C – Note output from ICC. Bind pelvis and Xray to ensure no fracture or position with binder satisfactory.
CXR and Pelvic Xray if NAD helpful for excluding these areas as sources for significant blood loss.
FAST scan in accredited hands detects blood in abdomen – if blood present then
– need surgeon NOW
- resus with blood, TXA and consider MTP,
- pt needs advanced imaging (CT abdo).

Slide 33

Specific Updates – Primary Survey

New fluid resuscitation algorithm for shocked trauma patient

- Tranexamic acid
- 10mL/kg blood
- 10mL/kg blood
- Massive transfusion protocol (MTP)
- Crystalloid if blood not available

Pg 120

Now Advocating Tourniquets, direct pressure and early tranexamic acid

Minimal Volume resuscitation

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Xray with pelvic binder in place

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D

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

- (C) Nil
- A groaning, gurgling secretions
- B SpO₂ 94% non-rebreather bag, RR 40/min
Decreased A/E, left chest, hyperresonant and tender
- C Pale, cold & clammy
pulse thready, HR 155/min
BP 90/ systolic, CRT 6 sec
- D Confused conversation, occasionally combative, GCS 10, left pupil dilated
- E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Activity 3 – Diagnoses & further Actions. ‘Lets talk about D’
Refresher whilst group give answers over next 2 slides
Time needed 2 mins for this and next 2 slides (Running time 45 mins at completion)

Slide 36

Re-assessment - Possible diagnoses

(C)	
A	Airway threatened, may become obstructed secondary to diminished LOC (closed head injury, opiates, shock)
B	Tension pneumothorax Massive haemothorax Flail chest & pulmonary contusions ? Diaphragmatic hernia
C	Intra peritoneal haemorrhage – ruptured spleen Retro-peritoneal haemorrhage – pelvis +/- kidney Cardiac tamponade/contusion, BP 90 = large blood loss
D	Progressive head injury – raised ICP, lateralising signs. Progressive spinal injury needs consideration
E	

D – Decreased GCS and signs raised ICP – severe head injury

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Treatment and investigation

(C)	
A	HFO NRB, suction, OPA ? NPA maintain C-spine immobilization – BVM, prepare for RSI
B	Left ICC – before or after RSI? CXR before/after?
C	Pelvic binder + Xray, FAST. 5mL/kg warmed blood, 10mL/kg crystalloid until available. Tranexamic acid. Surgeon
D	A VPU – likely intracranial haemorrhage – secondary brain protection Avoid hypotension or hypoxia. Hyperventilate (pCO₂ 35-40) Mannitol/hypertonic saline?
E	

D – management – secondary brain protection principles.
Best outcome for D is to ensure A, B and particularly C stable.
Safe intubation, hyperventilation to PCO₂ 30-35 is most HD stable way to decrease raised ICP – rapid effect within mins.
HTS also better if trying to avoid hypotension and diuresis, but takes 20-30 mins to have effect.

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E to end

	Dx	Rx/Ix
(C)		
A		
B		
C		
D		
E		
Other		

- (C) Nil
- A groaning, gurgling secretions
- B SpO₂ 94% non-rebreather bag, RR 40/min
Decreased A/E, left chest, hyperresonant and tender
- C Pale, cold & clammy
pulse thready, HR 155/min
BP 90/ systolic, CRT 6 sec
- D Confused conversation, occasionally combative, GCS 10, left pupil dilated
- E Temp 35°C, no extremity abnormalities, moving all limbs (7 mins)

Activity 3 – Diagnoses & further Actions. ‘Lets talk about E and Rx’
Refresher whilst group give answers over next 2 slides
Time needed 2 mins for this and next 2 slides (Running time 47 mins at completion)

Slide 39

Re-assessment - Possible diagnoses	
(C)	
A	Airway threatened, may become obstructed secondary to diminished LOC (closed head injury, opiates, shock)
B	Tension pneumothorax, Massive haemothorax, Flail chest & pulmonary contusions ? Diaphragmatic hernia
C	Intra peritoneal haemorrhage – ruptured spleen Retro-peritoneal haemorrhage – pelvis +/- kidney Cardiac tamponade/contusion. BP 90 = large blood loss
D	Progressive head injury – raised ICP, lateralising signs. Progressive spinal injury needs consideration
E	Hypothermia, hypoglycaemia, hidden injuries

E – keep warm, check BSL, log roll for occult injury.

Slide 40

Treatment and investigation	
(C)	
A	HFO NRB, suction, OPA ? NPA maintain C-spine immobilisation – BVM, prepare for RSI
B	Left ICC – before or after RSI? CXR before/after?
C	Pelvic binder + X-ray, FAST, 5ml/kg warmed blood, 10ml/kg crystalloid until available. Tranexamic acid. Surgeon
D	A VPU – likely ICH – secondary brain protection Avoid hypotension, hypoxia. Hyperventilate. Mannitol/hypertonic saline?
E	Exposure, look for injuries, keep warm, euglycaemia
ix, Meds	C-spine X-ray, CXR, pelvic X-ray – CT brain, CT abdomen Surgical and neurosurgical review

Trauma series xrays reasonable
Pt needs CT Abdo and CTB
Need surgical and Neurosurgical attendance

Slide 41

Diagnoses & Specific therapy	
Diagnoses	
C-spine Xray – NAD CXR – L ICC – resolved pneumothorax, # ribs Pelvic X-ray – left pubic bone # CT abdomen – ruptured spleen Multiple lacerated left kidney CTB – left S04, midline shift	
Specific therapy options	
Conservative ? Operative ? Interventional radiology ? Telemedicine ? Interfacility transfer required ?	

Start at 47 min Time 3 mins (Time 50 mins at completion of next 3 slides)
Eventual findings
Review the treatment options – but do not dwell upon these
The important point of all management options is that emergent paediatric trauma surgery should be available.

Text 5e Section 15.4 Page 172

What are the pre-requisite conditions for conservative management?

- Frequent monitoring
- Blood bank service including coagulation factors
- Accurate fluid management
- Emergent paediatric surgery immediately available

What are the indications for immediate laparotomy?





- Perforated viscous
- Penetrating injuries
- Refractory shock with clinical suspicion of intra-abdominal haemorrhage

Slide 42





A structured approach ...	
<C>	- control external bleeding
Airway	- oxygen, C-spine control
Breathing	- ventilatory support
Circulation	- haemorrhage control
Disability	- prevent secondary insult
Exposure	- temperature control

Slide 44

Airway & C-spine 	Imaging 
Circulation/ MTP/TXA 	Blunt vs penetrating 

A prompting slide to remind the candidates of the *differences* in resuscitation of the traumatic patient v the ill patient
- control of catastrophic haemorrhage, care of the cervical spine, need for x 2 lvs, early blood products in major haemorrhage, analgesia...

Prep for Thoracic Skills	
Landmarks (5 mins) SCAN ME 	Chest Tube Insertion (7 mins) SCAN ME 
https://flowcode.com/jyGZPhk3k08Pfc0	https://flowcode.com/jyGZPhk3k08Pfc0