Slide 1

Time needed- 3mins for 1st 3 slides
Review Instructor notes for each slide
50 minutes – interactive session – with whole candidate group

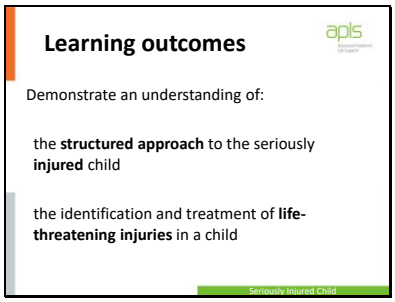
Requirements

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

Environment/Set

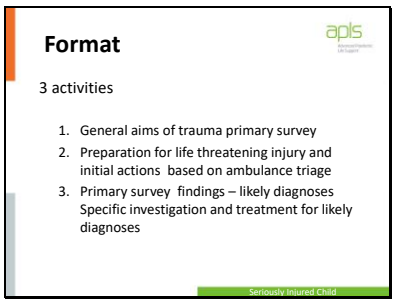
- Allow candidates to get themselves into 4 groups
- One instructor allocated per group (optional)

Slide 2



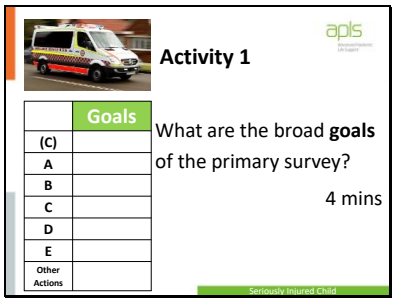
Read as on slide

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

Ask the groups to write on the A3

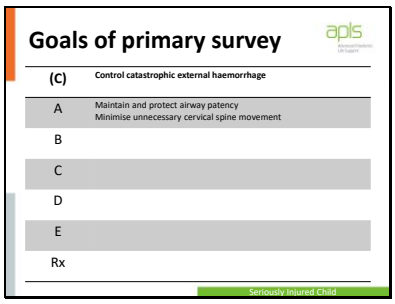
List the goals of each component of the structured approach of the primary survey'

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 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.)

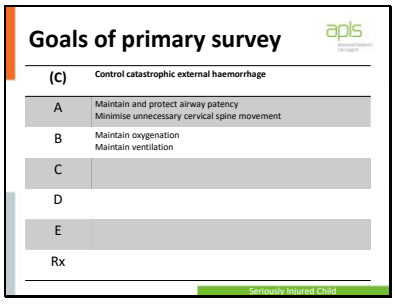
- **Activity 1 – Primary Survey Goals**
    - **Review the goals of each component of the structured approach**
    - ***This section is not about specific diagnoses – but rather the broad physiologic goals***
- Bring groups back together for plenary discussion with the next slide

Slide 5



- **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



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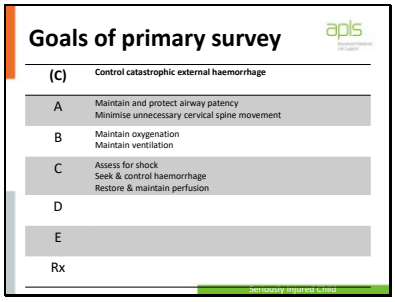
Slide 7



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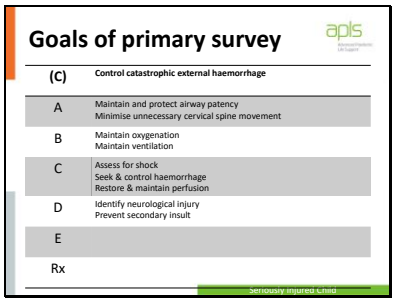
Slide 8



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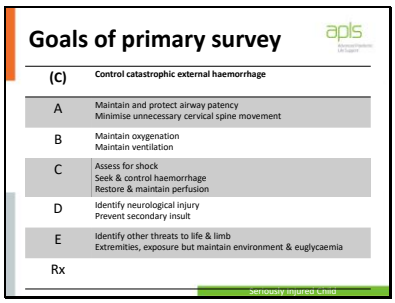
Slide 9



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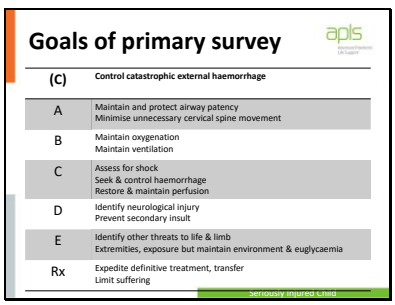
Slide 10



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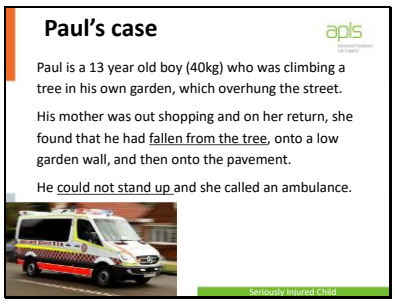
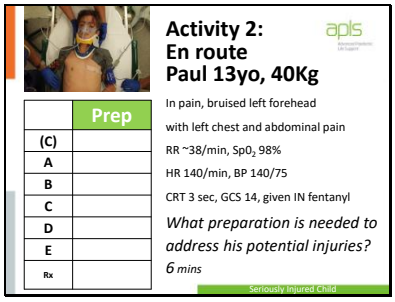
Slide 11



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



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 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),

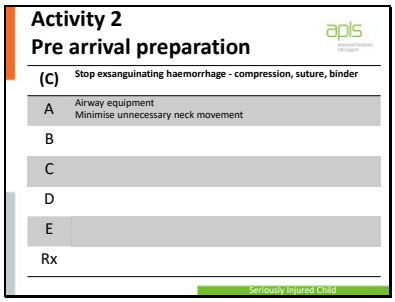
This way each group is moving down the primary survey rather than backward, and once reaching the end start at the beginning again.

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 13

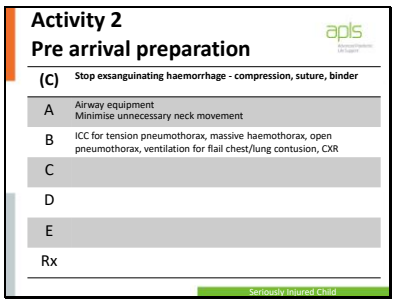


Activity 1B – Prehospital preparation

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

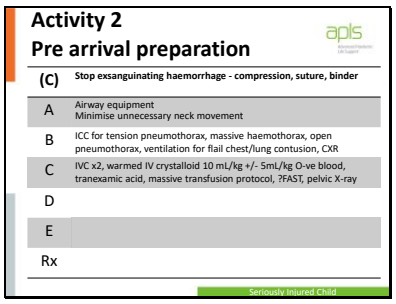
Slide 14



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.

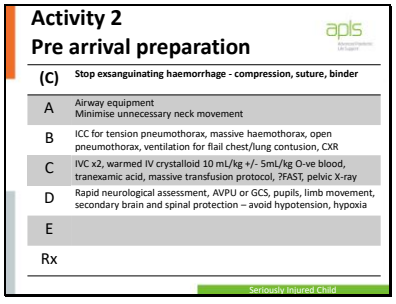
Slide 15



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.

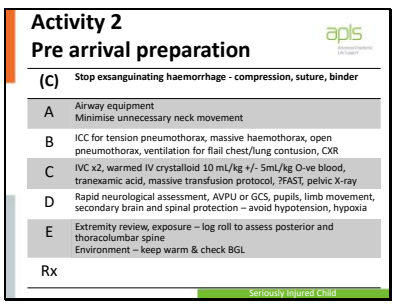
Slide 16



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.

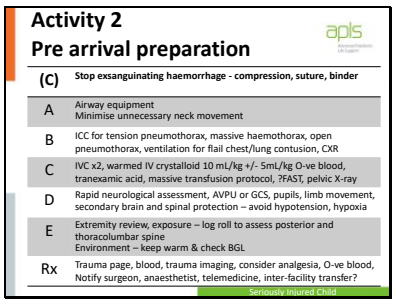
Slide 17



Activity 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.

Slide 18

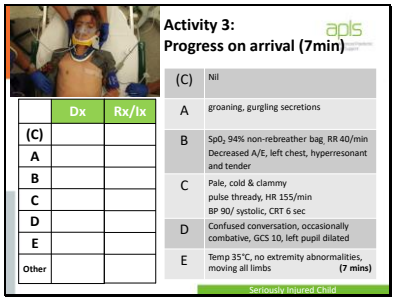


Activity 1B – Prehospital preparation

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.

Slide 19



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.

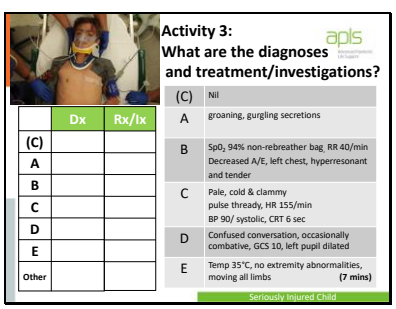
They should try and get through all goals but will be responsible for reporting back on the one they started on. **Works best going anticlockwise or right to left, so that Group 4 get B (had A) , Group 1 now get C (had B), group 2 get D/E/Other (had C), group 3 get A (had D/E/Other),**

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.

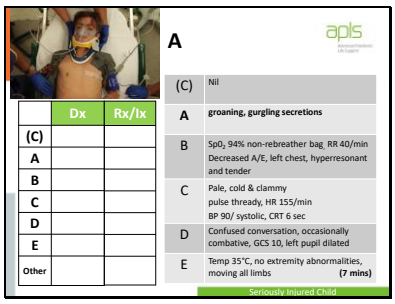
(1 facilitator per group with 4 slide handout to keep group on track.)

Slide 20



Activity 3 – Diagnoses & further Actions

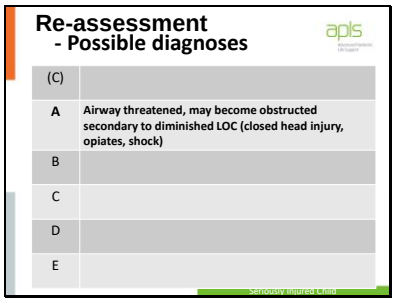
Slide 21



Activity 3 – Diagnoses & further Actions 'Lets start with A' -

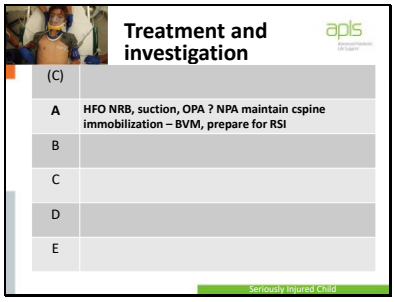
Refresher whilst group give answers over next 2 slides
Let them give answer before showing answer
Time needed 2 mins for this and next 2 slides (Running time 39 mins at completion)

Slide 22



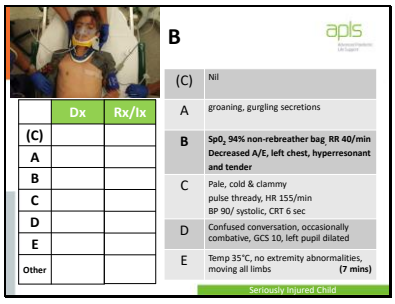
A – likely issues

Slide 23



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

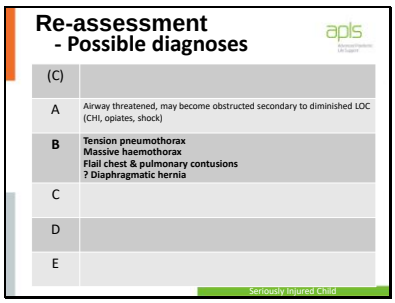
Slide 24



Activity 3 – Diagnoses & further Actions. 'Lets talk about B'

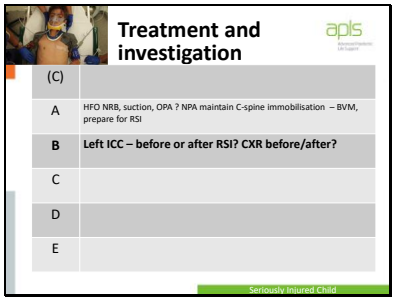
Refresher whilst group give answers over next 2 slides
Let them give answer before showing answer
Time needed 2 mins for this and next 2 slides (Running time 41 mins at completion)

Slide 25



B – likely DDx for decreased A/E

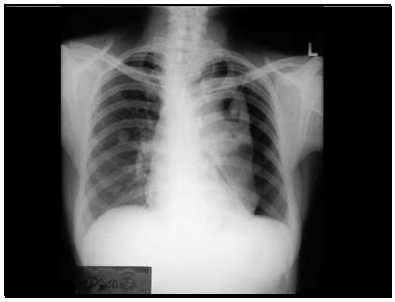
Slide 26



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.

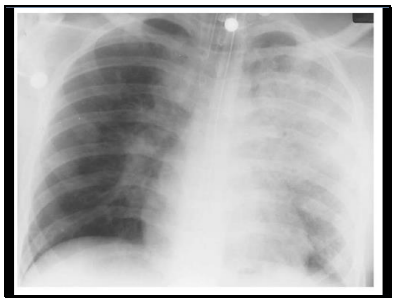
If A needs intubation, what is timing for ICC ?
Before or after intubation. With preparation for tension Ptx, better to do once intubated.

Slide 27



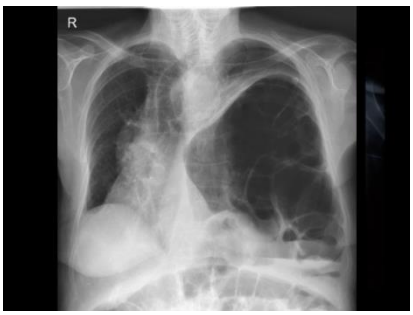
CXR DDx for decreased air entry – not all need ICC
Pneumothorax

Slide 28



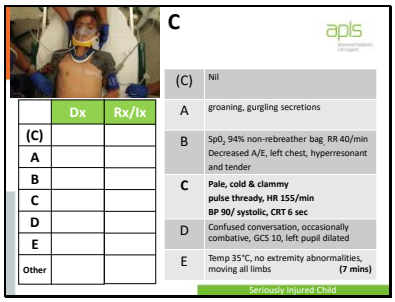
CXR DDx for decreased air entry – not all need ICC
Lung contusion

Slide 29



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

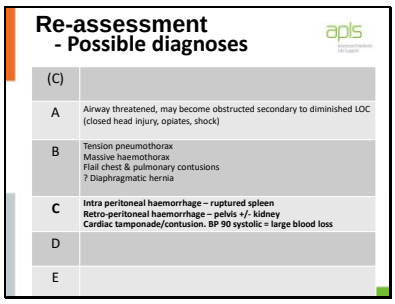
Slide 30



Start at 41 mins

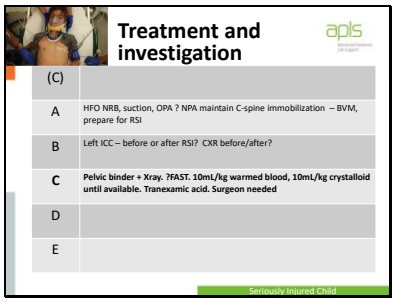
Activity 3 – Diagnoses & further Actions. 'Lets talk about C'
Refresher whilst group give answers over next 2 slides
Let them give answer before showing answer
Time needed 2 mins for this and next 2 slides (Running time 43 mins at completion)

Slide 31



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

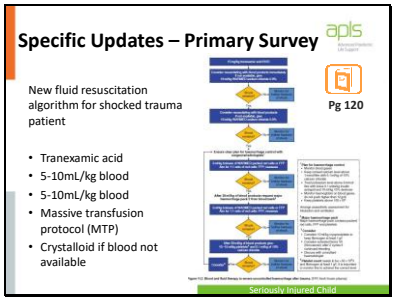
Slide 32



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



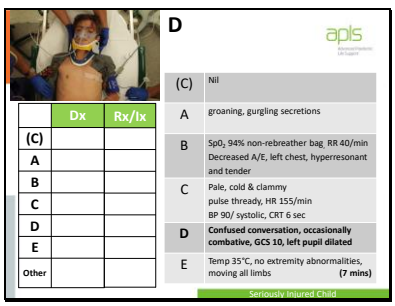
Now Advocating Tourniquets, direct pressure and early tranexamic acid

Minimal Volume resuscitation

Slide 34

Xray with pelvic binder in place

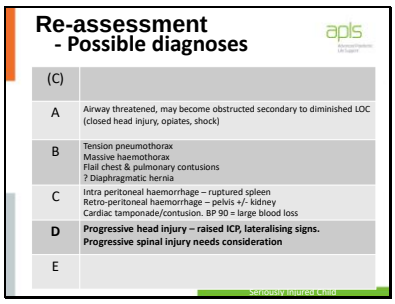
Slide 35



Activity 3 – Diagnoses & further Actions. 'Lets talk about D'

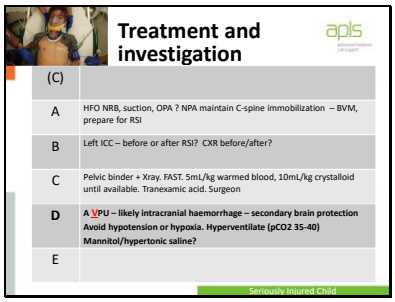
Refresher whilst group give answers over next 2 slides
Time needed 2 mins for this and next 2 slides (Running **time 45 mins at completion)**

Slide 36



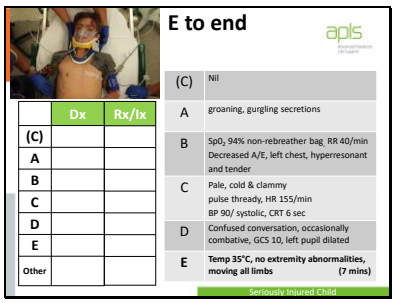
D – Decreased GCS and signs raised ICP – severe head injury

Slide 37



- **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.

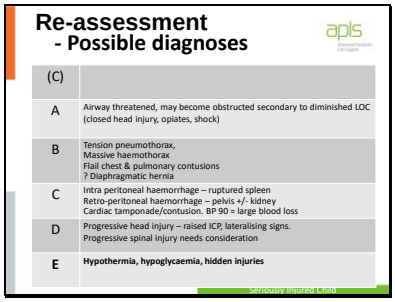
Slide 38



Activity 3 – Diagnoses & further Actions. 'Lets talk about E and Rx'

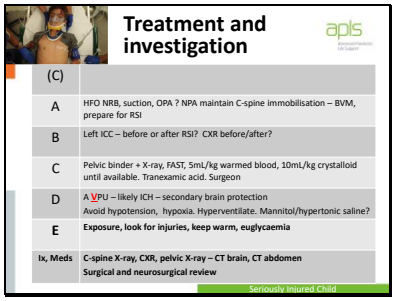
Refresher whilst group give answers over next 2 slides
Time needed 2 mins for this and next 2 slides (Running time 47 mins at completion)

Slide 39



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

Slide 40



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

Slide 41

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 6e Section 13.4 Page 136-137
What are the pre-requisite conditions for conservative management?

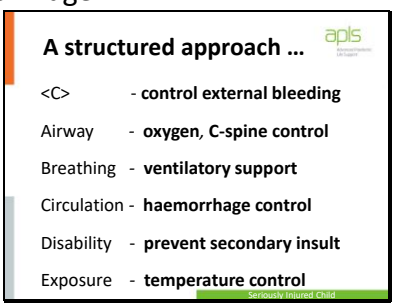
- Frequent monitoring
- Blood bank service including coagulation factors
- Accurate fluid management
- Emergent paediatric surgery immediately available

What are the indications for immediate laparotomy?

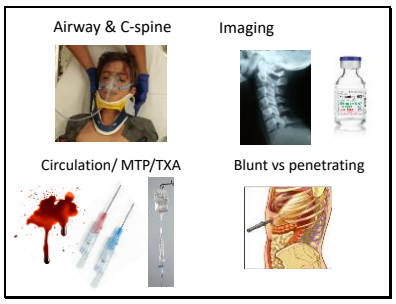
- Perforated viscous
- Penetrating injuries
- Refractory shock with clinical suspicion of intra-abdominal haemorrhage

Slide 42

Slide 43



Slide 44



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 Ivs, early blood products in major haemorrhage, analgesia…