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Trauma

Introduction

- Commonest Cause of Death 1-40yrs in most developed countries. For every 1 death there is 2 permanently disabled patients. Costs £1.2bill/yr (1998)
- Approach based on ATLS® principles from the American College of Surgeons from 1978
- Correct management really improves outcome
- People die on scene, early in minutes/hours or in days or weeks-we can help the last two

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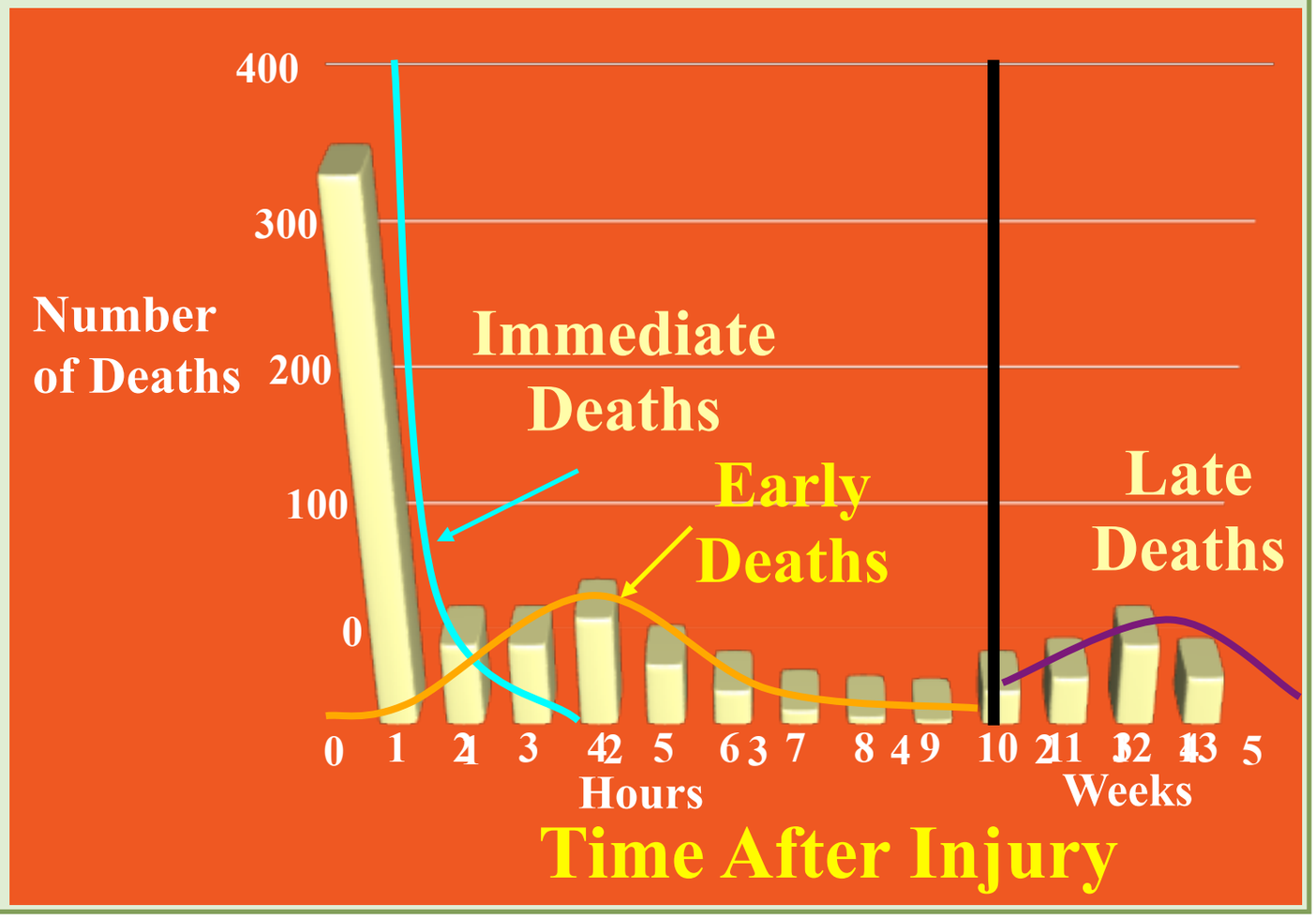
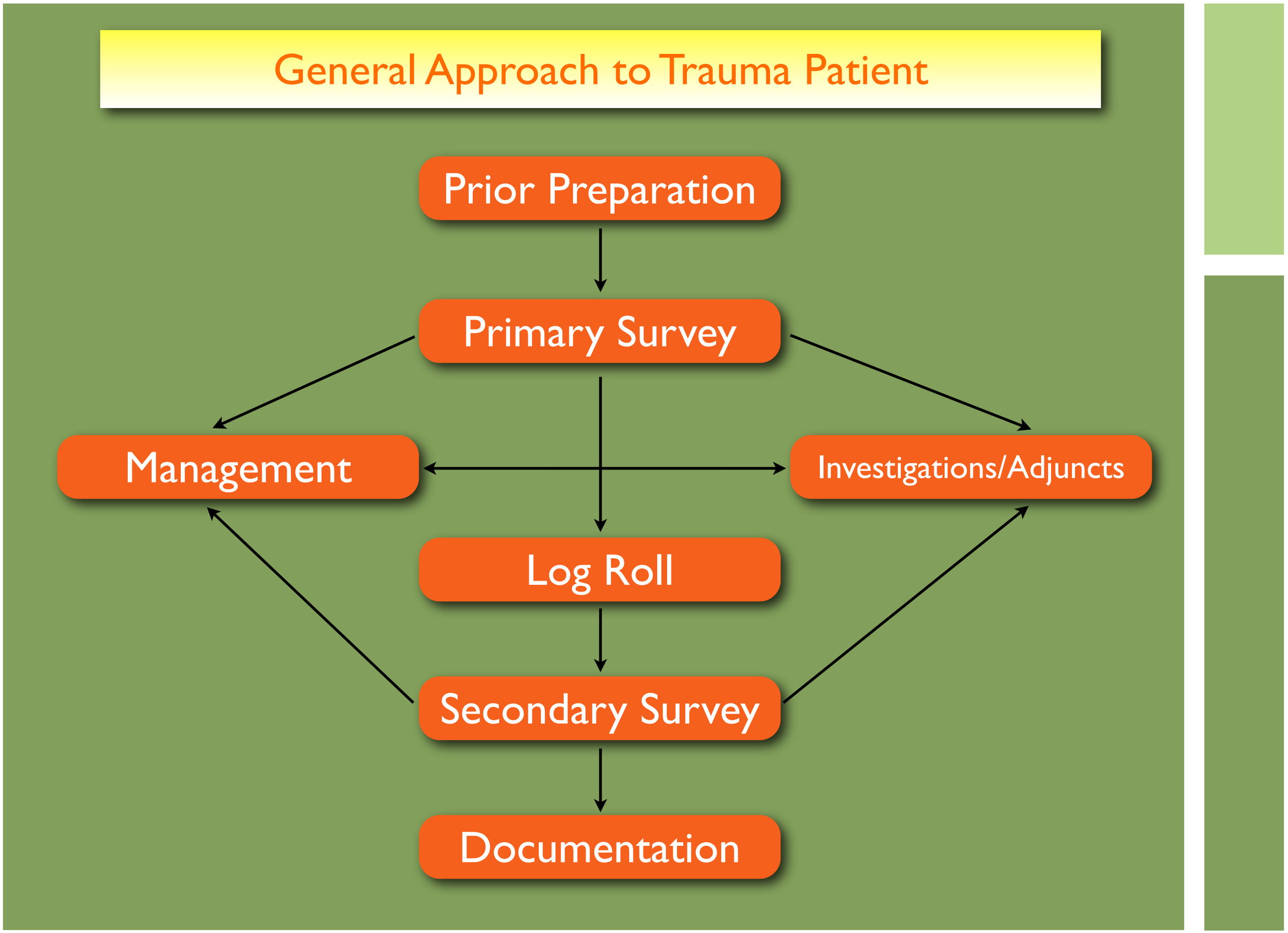


General Approach to Trauma Patient



Prior Preparation

- Training & practice, ATLS course
- Courtesy call from Ambulance Control
- Trauma team (ICU, surgeons, anaesthetist, A&E Cons)
- Ensure A&E Consultant aware
- Led by A&E most senior clinician, ideally Consultant (NCEPOD 2008)
- Ensure everyone has clearly defined roles, feed back to team lead
- Universal precautions

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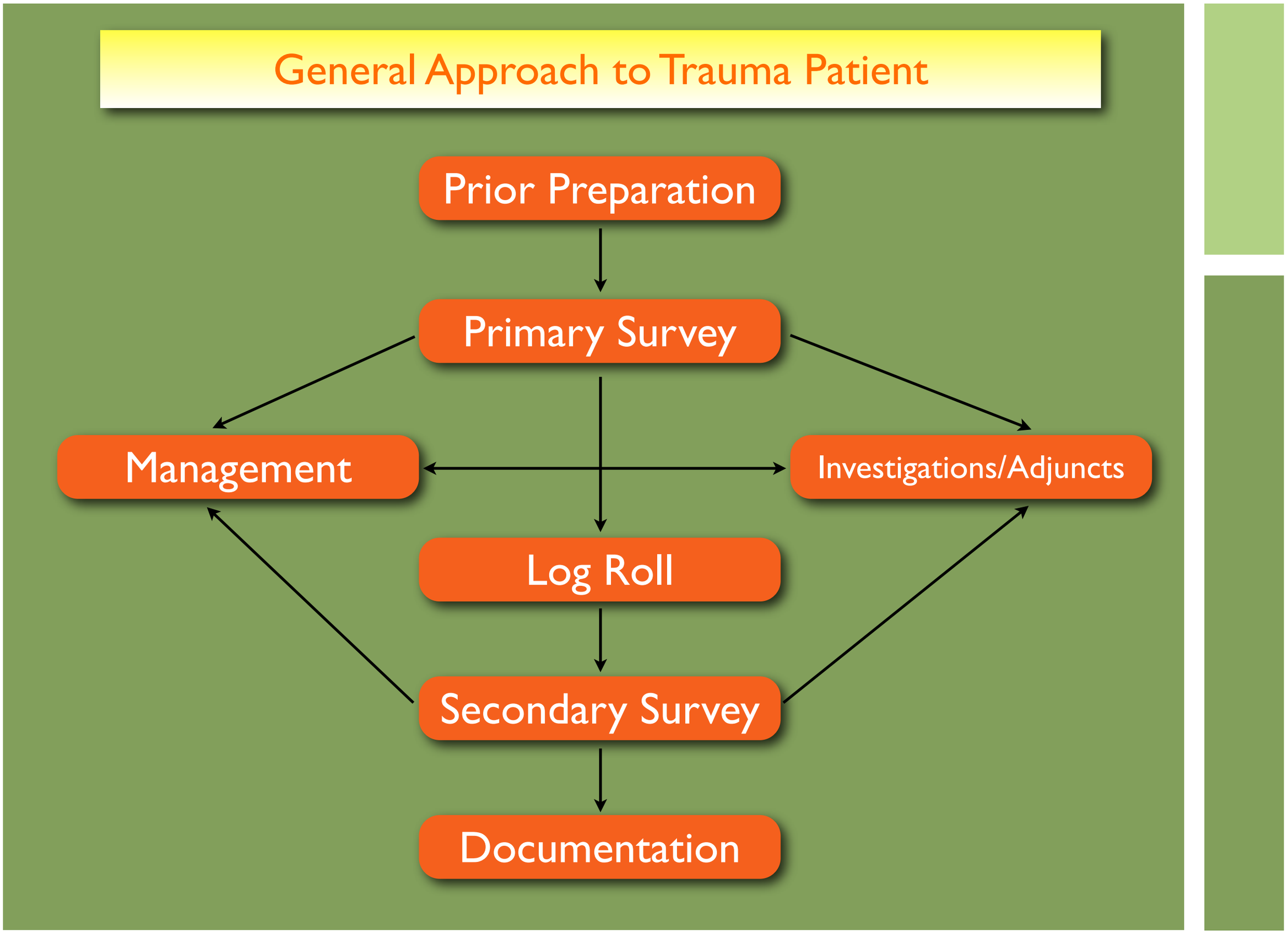

Primary Survey

- Airway with C-spine control (manual then collar/blocks)
- Breathing and ventilation
- Circulation with Haemorrhage control
- Disability: neurological status
- Exposure/Environmental control (avoid hypothermia)

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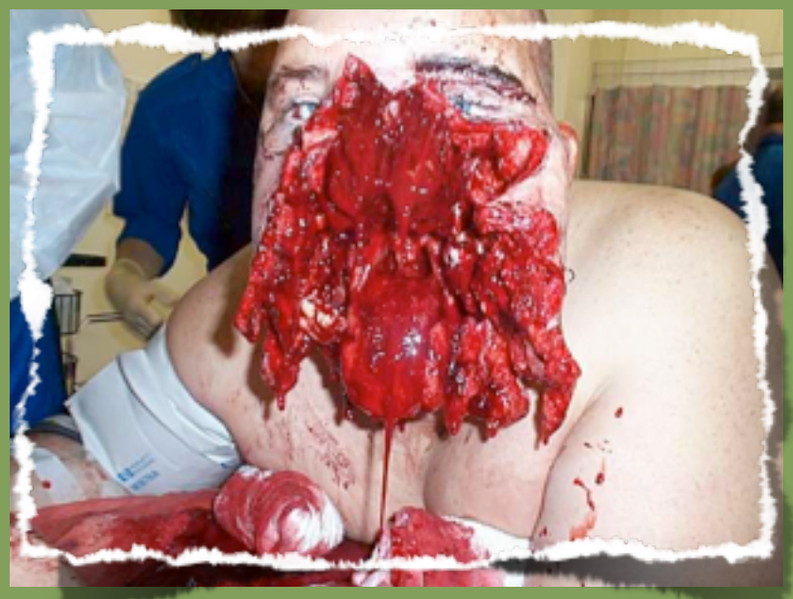


Primary Survey

- ABCDE can run concurrently in team situation
- Airway with C-spine control (manual then collar/blocks)
  - Do not let go the head once held. Don't assume neck is okay just because paramedics may have omitted collar/blocks
  - Don't leave airway until satisfactory. No head tilt/chin lift.
  - May need RSI
  - Surgical in severe facial trauma and airway compromise

Primary Survey

- Breathing and ventilation
  - Early oxygen 15L non-rebreather on all
  - Actively search for and treat if found:
    - tension pneumothorax, (needle decompression)
    - massive haemothorax, (chest drain/refer)
    - flail chest, (analgesia, ?RSI and chest drain)
    - open pneumothorax (three sided dressing)
  - Two large bore lines prior to chest drain even if treating massive haemothorax (loss of tamponade effect)

Primary Survey

Circulation with haemorrhage control

Two 16G & crystalloids (not colloids)

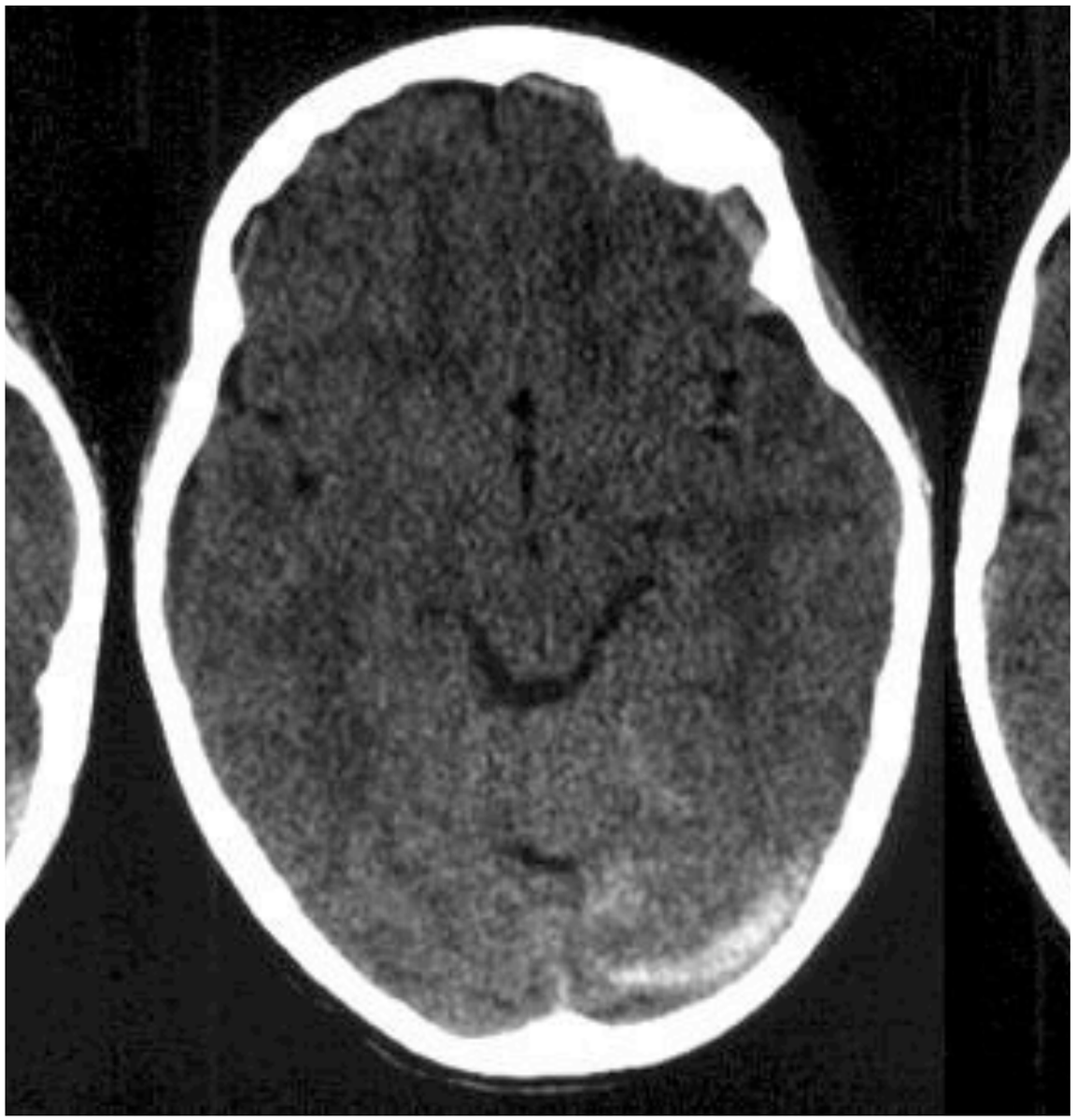
Splint/Direct pressure for actively bleeding wounds

Chest? Abdominal cavity? Pelvis? Retroperitoneal? Floor?

If abdominal injury unstable-needs laparotomy for ”C”; cautious fluids - systolic 100 and to theatre (....not CT).

If not responding: Packed cells O-neg, (immediate) then Group specific (30 mins) then fully crossmatched (45-60 mins)

Primary Survey



Disability: AVPU, pupils, motor and sensation

If GCS<8: will need RSI and ventilation, 20° head up, fluids +/- inotropes to keep blood pressure normal/normalBM/O_2

If stable, then CT head and liase with neurosurgeons at Hope and ICU.

If patient is unstable, head CT not a priority. Need to control A, B & C first. Every time there is a hypotensive episode in a severe head injury, the mortality rate doubles.

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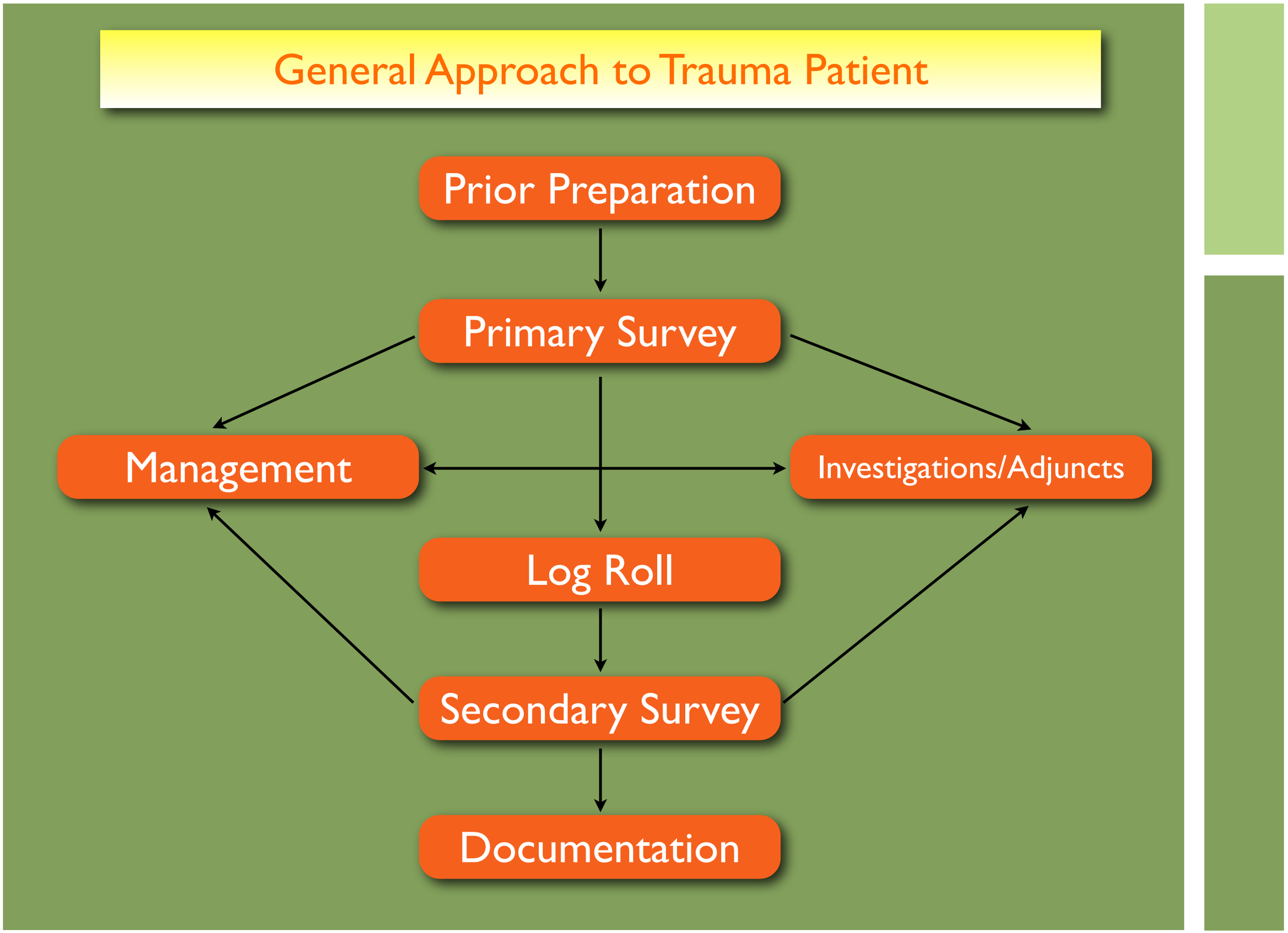

Investigations/Adjuncts

- X-rays: Chest, Pelvis & cross table lateral C-spine (many no longer do c-spine in resus)
- NG tube, catheter in ill patients or reduced GCS
- AMPLE history
  - Allergies
  - Medications
  - Previous illness
  - Last ate
  - Event details

BM, Cross match, routine bloods, pregnancy tests, ABGs, ECG, CT, USS etc

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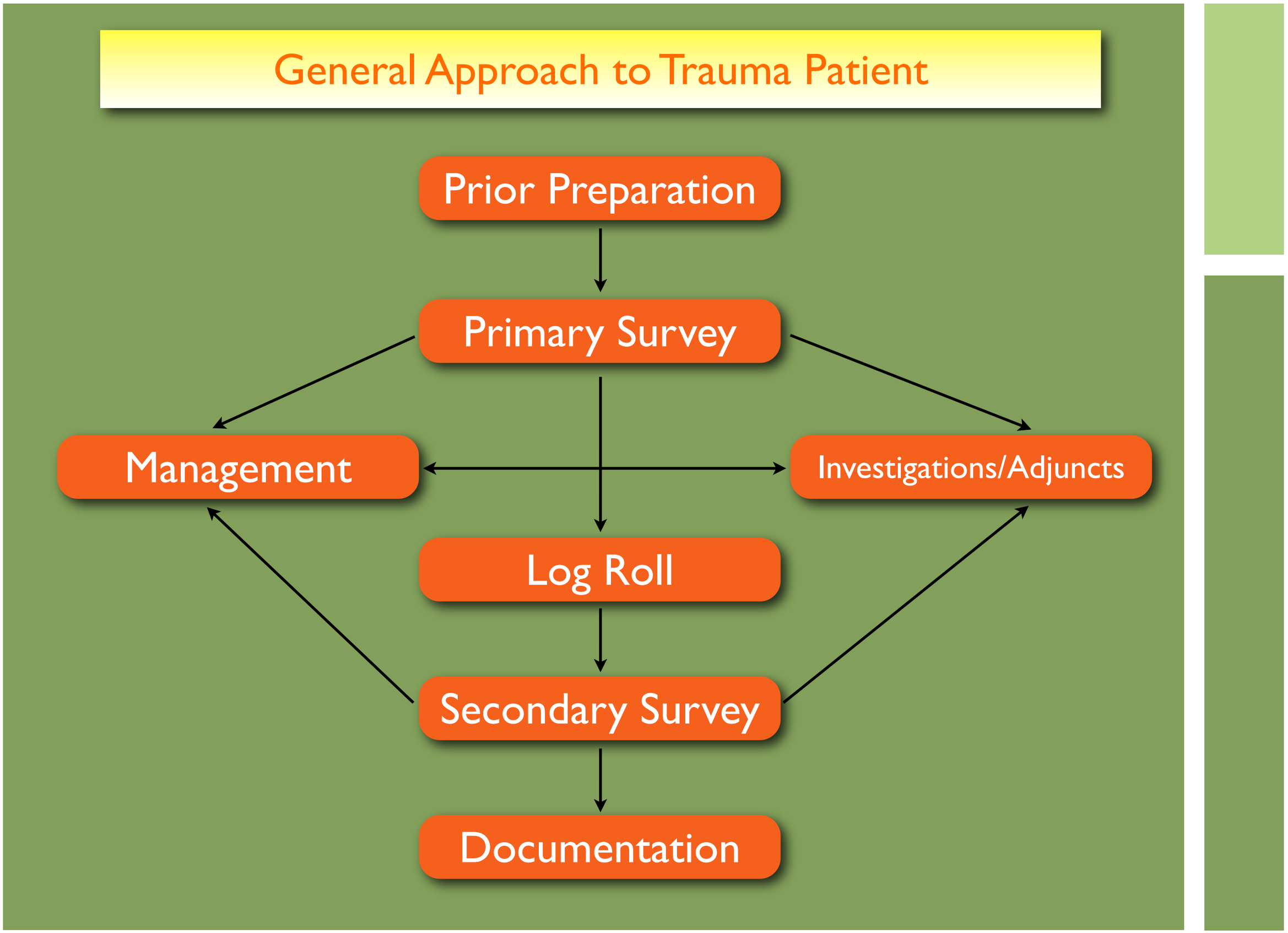
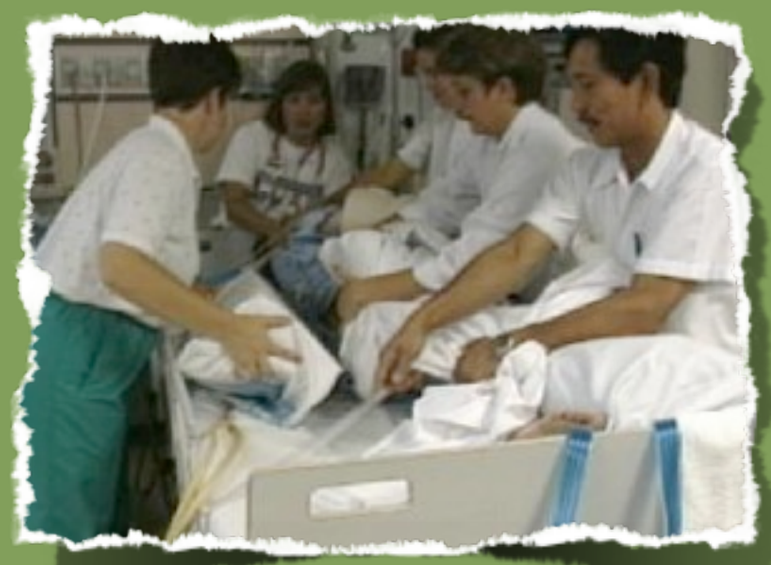


Log Roll

- Needs the right number of people: 4 plus examiner
- Within 1 hour if neurology. Not the FIRST priority.
- Control by the person holding head, remove blocks/collar
- Check full spine, back of chest and air entry, PR
- Remove board, replace collar and blocks
- Needs good communication with patient



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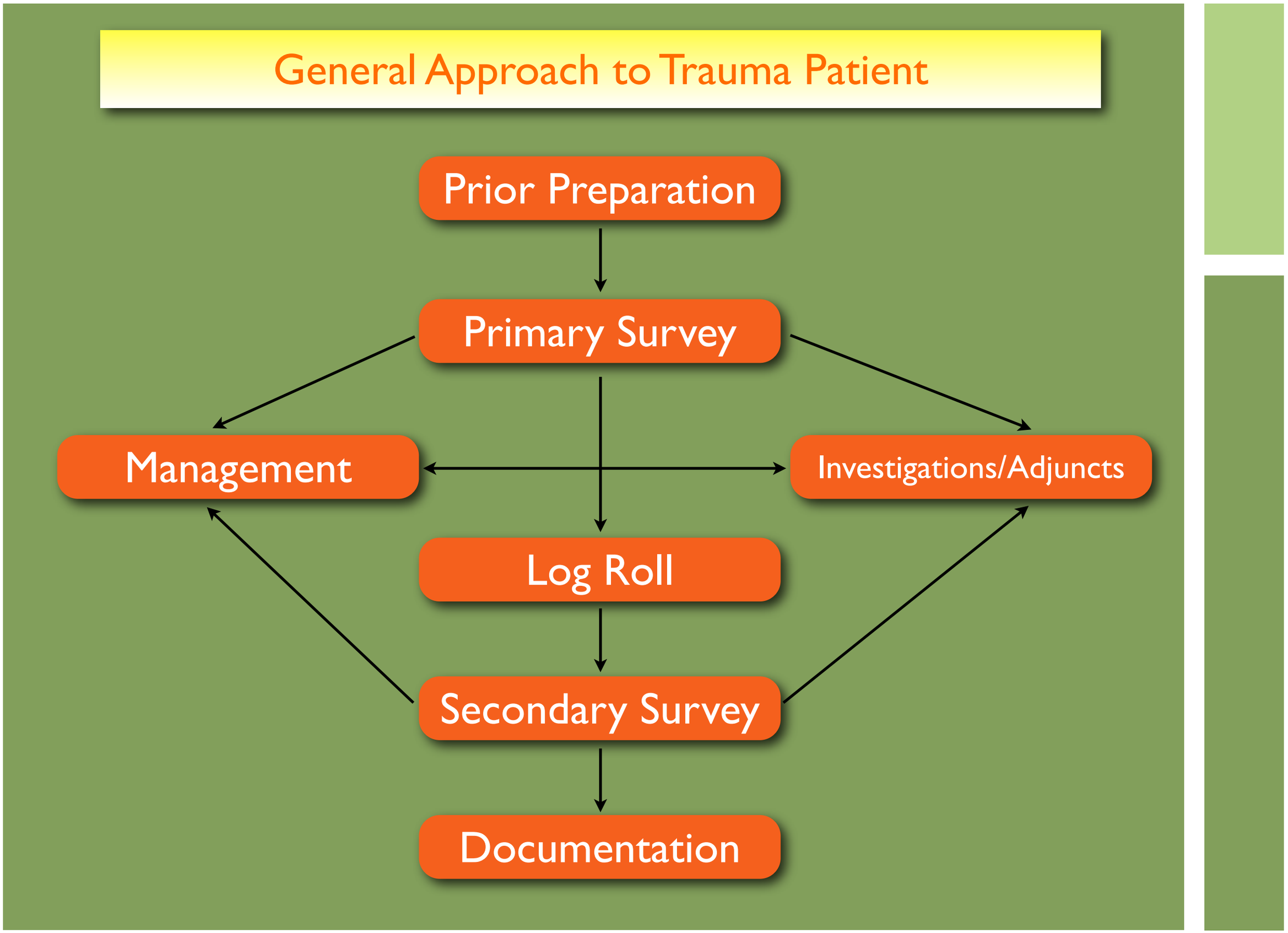

Secondary Survey

- Top to toe. Only if pt stable. May need to be deferred but this must be documented
- Eyes (VA, fundus, EOM), face, mouth, nose, scalp and ears and otoscopy
- Neck, bones and trachea/soft tissue
- Chest, air entry, heart sounds
- Palpate upper limb, move all joints. Incl. wrist, scaphoid, fingers. Pulses
- Abdo and pelvis, consider pv
- Palpate all lower limb, move all joints. Check knee ligaments.

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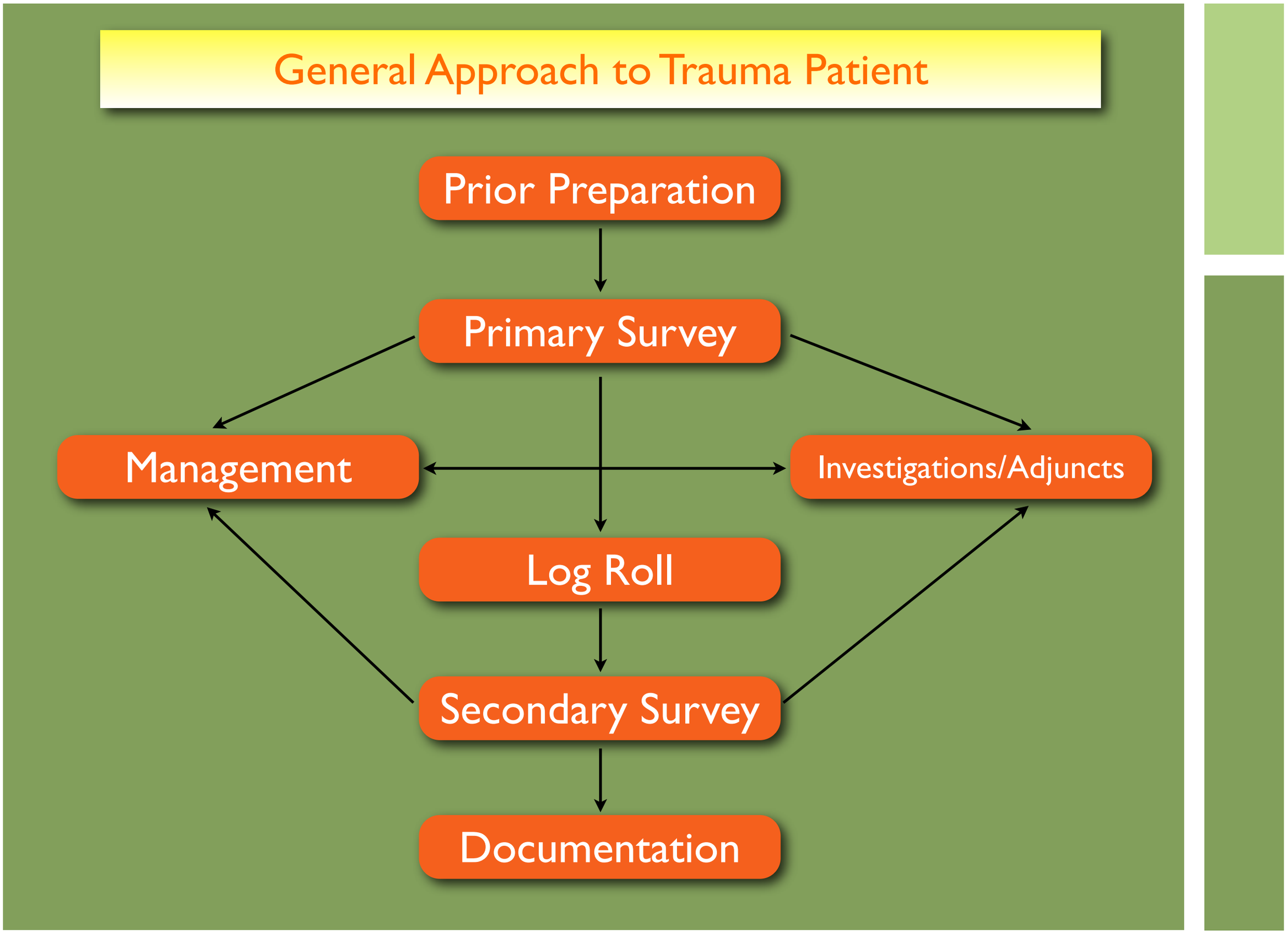

Management

- Concurrent with primary survey
- X-ray all suspicious parts after secondary survey if stable
- Definitive management may need to be delayed. A&E need to prioritise life then limb saving
- May need multi specialty referrals, eg ICU, neurosurgeons for head injury, surgeons for abdo and ortho for fractures.
- Don't forget ATT and antibiotics.
- If in CT for polytrauma: do head, neck, chest, abdo, pelvis: in isolated head injury with reduced GCS, also CT neck.

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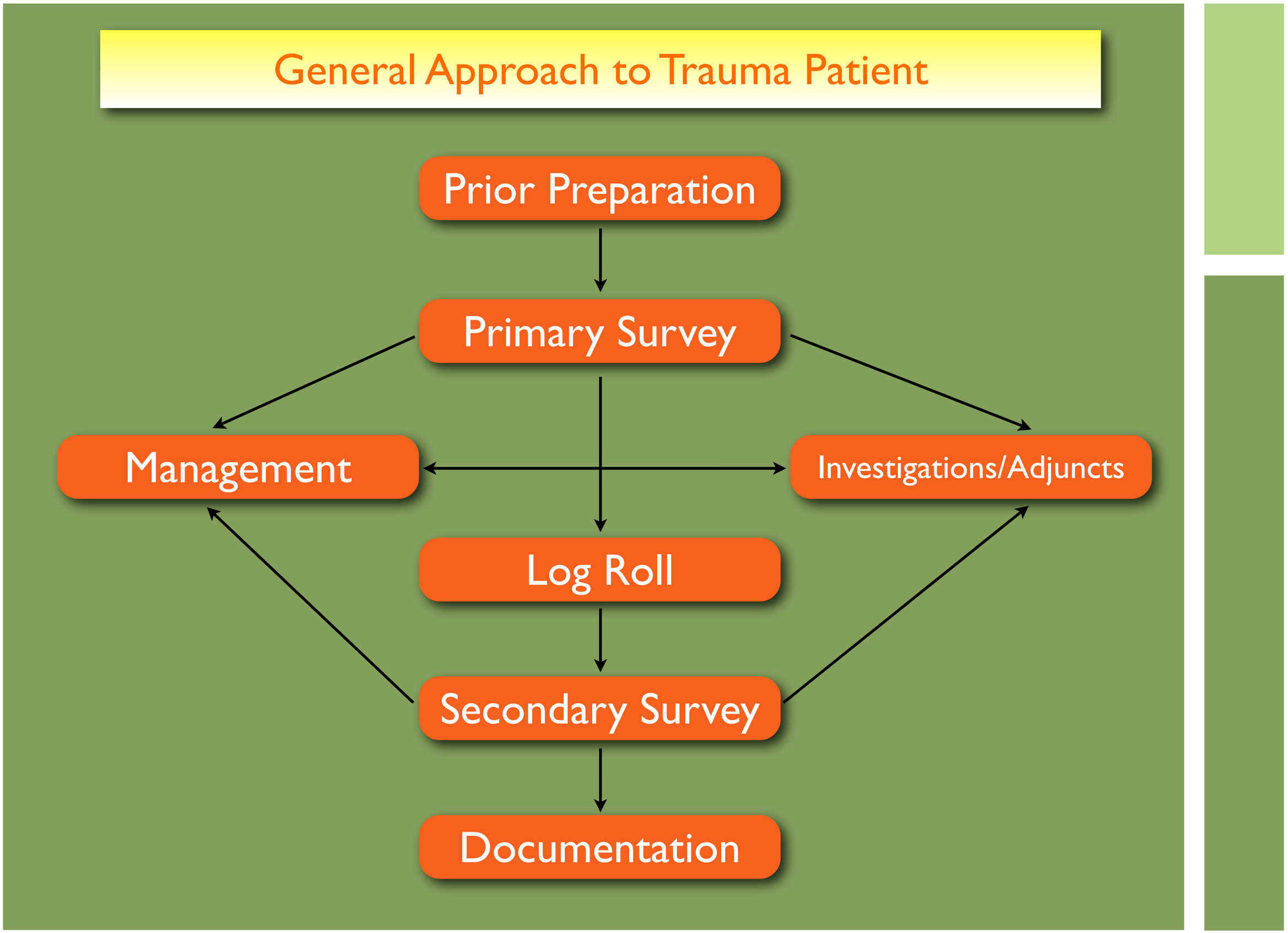

Documentation

- Usual demographics and Doctors names/times/dates etc
- Document in the order that you do it, so
  - short history with relevant info eg *"RTA, trapped 35 mins, one fatality, car write-off"* etc
  - Primary Survey, with concurrent management
    - *Airway clear, collar/blocks in situ, oxygen 15L*
    - *B: RR 16, AE equal bilat, no bruising, sats 100%*
    - *C: P130/min, CRT4s. BP90/50, 2x14G, 2L warm NS stat, xmatch 6units.*
    - *D: GCS E4V4M6 -14/15, PERLA, no neuro deficits*

    etc

Documentation

- Log Roll and findings
- Secondary survey detailing each area with positive/negative findings eg *Eyes NAD on gross, VA/EOM/fundus NAD.*
- AMPLE history
- Investigations done and results of these.
- Management of specific items
- Document all drugs/fluid given and times
- Relatives informed

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