The “Pan-scan” should be the standard of care for all major trauma patients

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NB

- Standard of care
  - Degree of prudence and caution required of a person who is under a duty of care
- “major” trauma patients
Usually means “whole body” CT

- Rapid
- Multislice
- Head/neck/trunk
Major Trauma CT protocol

- C Smith et al. EMJ (BMJ.com) June 2010
- University Hospitals of Coventry and Warwickshire
Indications for Major trauma CT

- **Penetrating trauma**
  - Gunshot wound (including air rifle)
  - Blast injury (bomb / explosion)

- **Blunt trauma**
  - *Combined* velocity $\geq 50$ km/h
  - Motor vehicle crash with ejection
  - Motorcyclist or pedestrian hit by vehicle $>30$ km/h
  - Fall $> 3$ metres
  - Fatality in the same vehicle
  - Entrapment $> 30$ minutes
  - Crush injury to thorax / abdomen
Results

• 87 of 114 eligible patients received a Major Trauma CT
• 17 unsuspected injuries were found
• 3 needed immediate management
Reduced time to OR
- 105 vs 120 mins

- Whole-body multislice computed tomography (MSCT) improves trauma care in patients requiring surgery after multiple trauma

- T E Wurmb et al EMJ. Online July 2010
  - University Hospital of Wuerzburg
Reduction in mortality risk

- German hospitals contributing to registry of German Trauma Society
- 1494 of 4261 (32%) given whole body CT
- SMR based on TRISS was 0.745 (95% CI 0.633–0.859) for patients given whole-body CT versus 1.023 (0.909–1.137) for those given non-whole-body CT (p<0.001).

- Huber-Wagner et al. Lancet  April 2009
- Munich
Routine Panscan in blunt trauma

- 1000 pts  592 no signs
- **Results:**
  - Clinically significant abnormalities were found in
    - 3.5% of head CT scans,
    - 5.1% of cervical spine CT scans,
    - 19.6% of chest CT scans, and
    - 7.1% of abdominal CT scans.
- Overall treatment was changed in 18.9% of patients based on abnormal CT scan findings.

What about the radiation?

- Dispute over dose
  - 12-16 mSv
  - Some claims up to 140 mSv
  - Increase in background lifetime risk of fatal cancer from 25% to 25.05%
  - Significantly less in a pan-scan than in sequential scans of body regions
Alternative to CT

- Lodox STATSCAN
Additional views

- Lateral C-spine