Fracture type	Number
Transverse/short oblique	7
Comminuted with same level fibula fracture	3
Transverse/Short Oblique with same level fibula fracture	12
Segmental loss	4
Bone loss	None

Table 1b
Wound classification.

Gustillo type	Number
I	12
II	7
IIIA	5
IIIB	5
IIIC	1

Methods: A clinical and radiological review of all open tibial fractures treated over a 2-year period (June 2007–June2009) across 2 acute care hospitals (non specialist centres) was undertaken. Patient demographics, mechanism of injury, AO fracture type and soft tissue injury classification

Results: During period of review, we had treated 30 open tibial fractures [females 8, males 22; median age (range) = 35 (12–89) years]. Median (range) follow up period was 6 (0.5–24) months. Wound grades and fracture type are described in Tables 1a and 1b. If recommendations of BOA/BAPRAS were implemented, review of fracture patterns and/or wound classification showed that 26 out of 30 would have required referral to a specialist centre. Of these 26 cases, all patients received antibiotics, tetanus status checked in 18 and documented photographs were available in 6 patients. Antibiotics were given at surgical induction and continued for 48 h in 21 cases (not documented in 5 cases). All patients had a thorough wound debridement and 24 patients went on to have definitive fixation (IM nail 13; ORIF 7, external fixator 4).Plastic surgery were involved in soft tissue management in 10 cases, (<48 h = 6; delayed = 4). Average (range) time to fracture union was 16 (6–40) weeks. There were minor complications (superficial infection, symptomatic implant) in 4 cases. Major complications were graft failure/wound necrosis (3), deep infection (3), non-union (1) and death (1).

Discussion: Our current practice needs to improve by better documentation of initial management and standardisation of antibiotic policy. If new BOA/BAPRAS guidelines are implemented, more than two-thirds of open-tibial fractures seen will need referral to a specialist centre. This would mean that the receiving specialist centre will deal with at least 12 additional cases of these complex injuries every year from every referring hospital in its catchment area.

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1A.33

Prophylactic fixation of donor site in radial forearm osteocutaneous free flaps using locking reconstruction plate augmented with mineral cement

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Introduction: Donor site fractures in osteocutaneous radial forearm free flap (ORFFF) can be minimised by prophylactic plating. Techniques using DCP and LCP plates have been described. We report our experience using small fragment locking reconstruction plate augmented with mineral calcium phosphate cement used to

Methods: Retrospective review of 18 consecutive patients underwent prophylactic fixation of flap donor sites. Mean follow up was 22 months (7 months to 4 years). 9 were not contactable (7 died, 2 moved away). The remaining 9 completed a 'Disabilities of the Arm, Shoulder and Hand' questionnaire (DASH) score. Non-contactable patients had case-note review.

Results: 1 patient sustained a donor site fracture. This was asymptomatic detected radiologically in the early post-operative hospital stay. Radiological assessment revealed a harvested graft length of 71 mm and thickness exceeding 50%. The fracture progressed to satisfactory union. No other donor site fractures were detected in the rest of the group. The mean DASH score was 29.8. No other plate related complications were noted.

Conclusion: Prophylactic fixation of donor site in ORFFF using reconstruction LCP plate with calcium phosphate cement showed low incidence of donor site fracture. The use of reconstruction plate allows easy and conforming application with less prominent metal ware. The locking fixation in addition to the mineral cement augmentation may provide a biological environment for healing.

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1A.34

The helicopter emergency service in the transport of trauma patients: a systematic review of the evidence

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The UK's National Confidential Enquiry into Patient Outcome and Death (NCEPOD) report into trauma care within the UK concluded that "almost 60% of the patients. . .received a standard of care that was less than good practice", with pre-hospital care and trauma networks found to be deficient.

Pre-hospital care of trauma patients is a matter of great debate. The optimal transport method remains undecided with conflicting data comparing helicopter and ground emergency medical transfer. This study systematically reviews the evidence comparing helicopter and ground transfer of trauma patients from the scene of injury.

Methods: A systematic literature review of all population-based studies evaluating the impact on mortality of helicopter transfer of trauma patients from the scene of injury. We searched MEDLINE, CINAHL and EMBASE from January 1980 to December 2008 and selected and reviewed potentially relevant studies.

Results: A search of the literature revealed 23 eligible studies. 14 of these studies demonstrated a significant improvement in trauma patient mortality when transported by helicopter from the scene. 5 of the 23 studies were of level II evidence with the remainder being level III evidence. Data were then entered into an evidence table and reference made to transport staffing, intubation rate, time at scene and time/distance of transfer.

Conclusions: The role and structure of HEMS in a modern trauma service is a debate that is likely to continue. Pre-hospital care design should be specific to critical incident frequency, geographical arrangements of hospital facilities and travel times within each trauma network. It is also important to consider the benefits and capabilities of the emergency medical team separately from the transport method being considered. An effective helicopter EMS will ultimately depend on effective operating procedures and task-