

Supplementary material 1: Interim survey questions

1. A pneumothorax is a collapsed lung and happens when air becomes trapped in the space between the lung and the chest wall. The air enters this space either from the lung or from outside the body. A haemothorax is when blood gets trapped in the same space. Both conditions can be treated with drainage. Are smaller, thinner drains as effective as large wider drains?
2. Following injury, which patients should undergo a whole-body CT scan for investigation and management, and what is the risk and predictors of significant injury?
3. After an injury some patients lose so much blood that their life is put at risk. We want to know whether replacing the lost blood with whole blood (red cells, plasma and platelets) can improve outcomes for patients and is cost effective compared to standard care (blood, plasma and platelets given individually)
4. Should adult trauma patients who are admitted to hospital with a sternal fracture be investigated and monitored for cardiac bruising?
5. After an injury to the leg, it may need to be fixed in place for a while to prevent using it. This can put a patient at risk of a blood clot in the leg or the lung. Which patients in this situation need blood thinning medications to prevent getting a blood clot? Is a blood thinning medication taken as a tablet more effective than an injection under the skin to reduce blood clots?
6. After an injury some patients lose so much blood that their life is put at risk. Current practice is to try and balance blood flow to the tissues with making sure any clots that have formed remain in place. This is called haemostatic resuscitation. We want to know if this approach is still applicable when patients receive a lot of blood transfusions and whether it improves outcomes for patients.
7. In patients suffering traumatic injuries where bleeding is suspected, what are the most effective treatments in the ED setting to improve survival?
8. What is the optimal care pathway for patients presenting with blunt chest wall trauma to the ED?
9. In older, frail patients with injury, how do we optimise assessment (including specific trauma assessment/call activation), management, clinical outcomes and patient experience?
10. In those patients who present over 24 hours after experiencing a mild head injury who should undergo a CT head scan?
11. What is the optimal management strategy for patients taking anti-platelets and anticoagulants who sustain head injuries?

12. What interventions (such as detailed information or digital cognitive behavioural therapy) can be given to patients with a mild head injury who are discharged from the ED that may reduce the severity and duration of post-concussion symptoms and number of patients who have persisting problems?
13. For patients with minor head injuries, can a blood test used alone or in conjunction with National Institute of Clinical Excellence (NICE) clinical decision rules be used to determine which patients require a CT scan to exclude a significant brain injury?
14. How can we predict which patients will have persisting symptoms following a mild head injury and therefore require further assessment and follow up?
15. In patients presenting to the ED with minor head injury which blood biomarker tests can predict long-term outcome?
16. After a mild head injury can we use a blood test to identify any problems with how the blood is clotting and what is the best way to address this through treatments or how we manage the care of the patient?
17. Does giving intravenous fluid to an elderly patient who has been lying on the floor for over two hours reduce the risk of developing an acute kidney injury or reduce their length of stay in hospital?
18. Current treatment for a paracetamol overdose is N-acetylcysteine. Are there other treatments available which may improve patient outcomes and experience?
19. Is flumazenil (a drug used to reverse sedative effects of benzodiazepines) safe to be used in the ED and given to patients to take home for patients presenting with recreational overdoses?
20. Point-of-care testing (POCT) is rapid laboratory testing conducted and analysed close to the site of patient care. Is POCT in the Emergency Department for cardiac troponin safe and beneficial to use?
21. In chest pain, how can we promote shared decision making around acceptable risk to provide safe and appropriate care and minimise unnecessary risk and inconvenience for patients?
22. The National Early Warning Score (NEWS) is used to monitor patients using clinical observations. Does the identification of those patients with a high NEWS in the ED allow for earlier treatments and improved outcomes for patients?
23. Can a blood test (biomarker) help identify those patients who present with sepsis to the ED that require early treatment and improve patient outcomes?
24. How do we identify patients who present to the ED with Acute Aortic Syndrome and are there decision tools which can reduce overuse of computer tomography scans to identify these patients?

25. Older patients are at increased risk of adverse drug reactions. Research is required to understand current ED practice in terms of identifying patients at risk and in those who present following an adverse drug reaction, identifying or developing tools that are suited for application in the ED.
26. Are decision aids that help a clinician to determine if a patient should be investigated or treated for a pulmonary embolism still helpful following COVID?
27. In patients who have small blood clots in the lung is blood thinning treatment necessary?
28. In patients with acute low back pain, are there signs and symptoms which should lead to an emergency magnetic resonance investigation (MRI) being performed to rule out cauda equina syndrome, a condition which requires urgent management?
29. In patients with low back pain, is a benzodiazepine drug more effective than simple analgesia e.g. paracetamol, ibuprofen at restoring mobility, reducing pain and allowing return to full function?
30. Do early undifferentiated (broad spectrum) antibiotics in suspected severe sepsis have a greater benefit and cause less harm to patients than delayed focussed antibiotics in the ED?
31. In patients with acute severe headache, can an early CT scan accurately identify those patients who might have suffered a bleed into the brain without needing to take a sample of spinal fluid through a needle at the base of the back
32. How does Emergency Medicine compare in cost/quality of care/patient experience compared to other healthcare options e.g. urgent care centres, GP hubs
33. What interventions (such as inpatient ward 'boarding') can be done to reduce the excess mortality risk of patients having to spend long hours in ED waiting for admission to inpatient wards?
34. How can we improve work/life balance amongst ED staff to better retain our staff, including rota design and other working conditions and with regard to how ED staff development is managed, what initiatives can improve staff engagement, resilience, retention, satisfaction, individuality and responsibility?
35. What measures and interventions can we use to reduce the harms of crowding in the ED and prioritise patient care most effectively?
36. Does having a senior emergency medicine clinician involved in triage of patients improve the flow of patients in the department and the experience and care that patients receive?
37. Does having a physiotherapy team in the ED improve patient flow and patient reported experience measures?

38. Can Artificial Intelligence be used for imaging e.g. x-rays, CTs in the ED to improve patient, clinician and department outcomes?
39. Does a departmental simulation training program (where mannequins are used to simulate patients) reduce medical error and improve quality of patient care?
40. How can we increase patient and public involvement and engagement to ensure Emergency Medicine research is patient directed and inclusive?
41. How can we make the Emergency Department environment better for patients and staff?
42. How do we optimise care for mental health patients whether presenting with either/both physical and mental health needs; including appropriate space to see patients, staff training, early recognition of symptoms, prioritisation, and patient experience?
43. What is the best way to care for people who attend emergency departments very frequently?
44. Does referral to advocacy/support services improve quality of life for victims of domestic abuse identified in ED?
45. How do we make sure different patient groups receive excellent care in the emergency department?
46. What tools can we use in the ED to improve communication with people who are hard of hearing or who are deaf - including people who don't realise they have hearing loss (e.g. the elderly)
47. How can we achieve excellence in delivering end of life care (recognising that a patient is dying, understanding patient and family views, and relieving patient symptoms) in the ED? How can we best support patients, families and staff with handling bereavement issues?
48. How do we improve care and experience for transgender patients attending the ED?
49. What is the prevalence of neurodivergence in the ED workforce and patient populations, and how do we improve the care experience for these patients?