

Ambulatory Emergency Care (AEC)

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Introduction

This session will cover:

- Introduction to Ambulatory Emergency Care and the national view
- The service at Imperial College Healthcare NHS Trust
- Data from the service so far
- Conditions seen and pathways from primary care
- Referring in to the service
- How will we know it's working?
- Ongoing work

What is Ambulatory Emergency Care?

‘Ambulatory care is clinical care which may include diagnosis, observation, treatment and rehabilitation, not provided within the traditional hospital bed base or within traditional outpatient services, and that can be provided across the primary / secondary care interface.’

Royal College of Physicians Acute Medicine Task Force, and endorsed by The College of Emergency Medicine, 2012.

Why is it needed?

- Emergency department (ED) attendances are rising across the UK.
- ED waiting time targets are not being met.
- In addition, conversion rate to admission is also rising nationally.

- Could ambulatory emergency care (AEC) be part of the solution?
- Its potential impact on emergency care has been likened to that of day surgery on planned care.

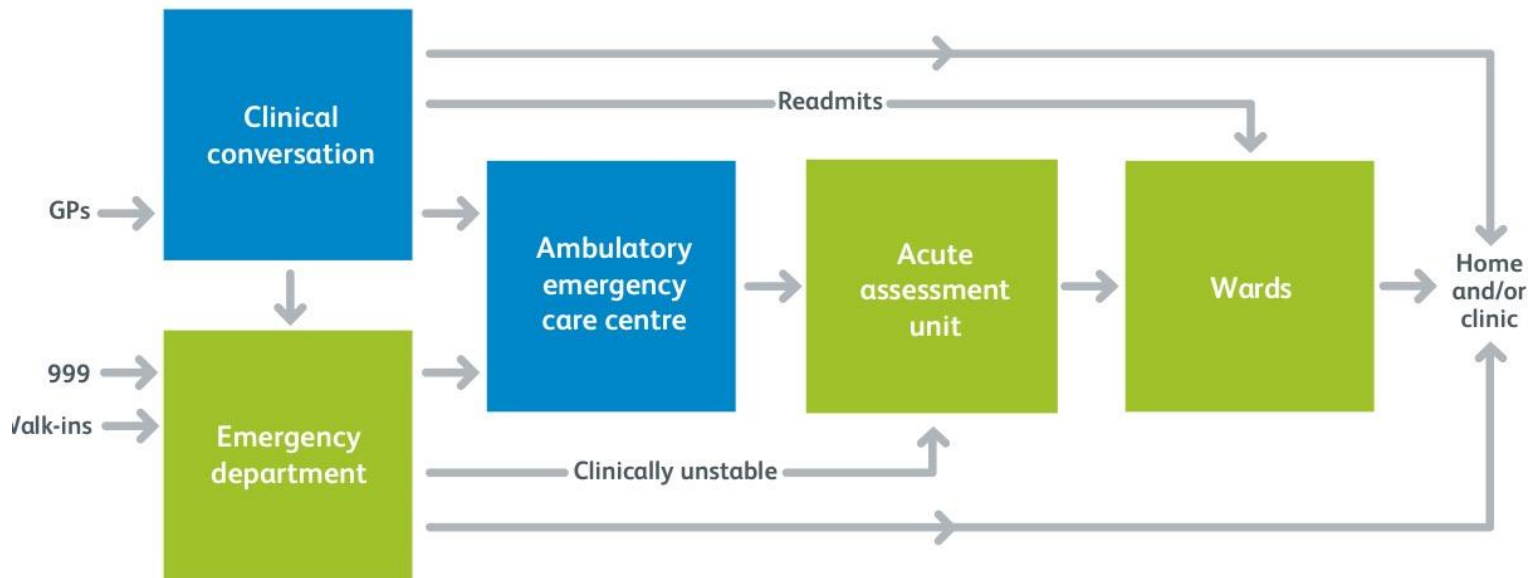
How does it work?

- Emergency patients are seen in an ambulatory emergency care unit for rapid diagnosis and management of their acute presentation.
- Streamlined processes – consultant review, rapid access to diagnostics, treatments delivered the same day.
- Integration with community and out patient services to allow efficient ongoing care.
- Follow up of ward patients where appropriate as part of early supported discharge.

AEC model

Figure 1: Example of an AEC process model

Overarching principle: treat all emergency patients as ambulatory until proven otherwise



From RCP Acute Care Toolkit 10, Royal College of Physicians, October 2014.

Experience from other Trusts

National experience indicates that ambulatory emergency care is:

- Safe
- Cost-effective
- Useful in improving patient outcomes
- Popular with patients

Video

Short video about experiences from Cardiff.

<https://vimeo.com/162818965>

AEC at Imperial

- Service provided at CXH and SMH.
- SMH:
 - Four clinical rooms, some with space for two patients.
 - Open Monday-Friday 8am-10pm and weekends 10am-8pm.
 - Staff - allocated ED consultant, ED registrar, medical SHO, GP Fellow one day a week, AEC/ED nursing team, ward clerk.

AEC at Imperial (cont.)

- CXH:
 - Main clinical space with three couches.
 - Four private consultation rooms.
 - Open Monday-Friday 8am-10pm and weekends 10am-8pm.
 - Staff – two ED registrars, ED nursing staff.

Data from Imperial

- Audit of patients aged 16-65 with length of stay < 3 days admitted under medicine in December 2016 and January 2017:
 - 1,223 admissions.
 - 125 (9%) breached whilst in ED.
 - Of those, up to 31 (20%) were identified as being potentially suitable to be managed via AEC.

Conditions suitable for AEC

- Venous thromboembolism – suspected DVT or PE
- Renal colic
- Low risk chest pain
- Low risk GI bleed
- Cellulitis / pyelonephritis requiring IV antibiotics
- Hyperemesis gravidarum
- Transient loss of consciousness
- First fit
- Acute headache requiring imaging

Conditions suitable for AEC (cont.)

- Temporal arteritis
- Electrolyte abnormalities
- Pyrexia of unknown origin
- Painless jaundice

- Other acute presentations requiring urgent investigation or treatment – on discussion with the unit.

Is the patient suitable for AEC?

1. Is the patient clinically stable?
2. Is the patient functionally capable of being managed in AEC?
3. Would this patient have been admitted to hospital before AEC existed? (*If no, then they should not be sent to AEC*).
4. Could the patient's clinical needs be met better by another service? (*eg – specialist clinics, specialist nurses, community services*).

Patient criteria for AEC assessment

Patients must have normal observations and be ambulant (ie – not in a hospital bed, need to be able to mobilise down the corridor).

- Systolic BP > 100
- Pulse < 100
- Sats > 92% on air
- Alert
- Walking / wheelchair with a carer
- Age > 16 years

Ambulatory care (AMB) score

Figure 2: Ambulatory care score (AMB score)¹¹

			Score
Sex	Female	0	
	Male	-0.5	
Age	<80 years	0	
	≥80 years	-0.5	
Access to transport	Yes	2	
	No	0	
Will likely need IV Rx	Yes	0	
	No	2	
Acutely confused	Yes	0	
	No	2	
NEWS	NEWS=0	1	
	NEWS ≥1	0	
Discharged last 30 days	Yes	0	
	No	1	
Total			

If the AMB score is ≥5, consider ambulatory care.

From RCP Acute Care Toolkit 10, Royal College of Physicians, October 2014.

Suspected DVT

- Signs or symptoms of uncomplicated below knee DVT
- Other causes unlikely from history and examination.
- Perform Wells score – if ≤ 1 , DVT is unlikely and D-dimer can be performed. If D-dimer is negative, DVT is unlikely and another cause should be sought.
- If Wells score is 2 or above, or D-dimer is positive, refer to AEC.
- Consider giving NOAC or LMWH if AEC appointment is not the same day.

Suspected PE

- Signs or symptoms of PE.
- Haemodynamically stable, saturations $\geq 92\%OA$.
- Other causes unlikely from history and examination.
- Consider giving NOAC or LMWH if AEC appointment is not the same day.

Cellulitis / pyelonephritis requiring antibiotics

- Signs or symptoms of cellulitis, pyelonephritis or UTI.
- Clinician deems that oral antibiotic treatment is likely to be inadequate.
- No signs of significant systemic illness or necrotising fasciitis.
- Patient is haemodynamically stable.
- Orbital cellulitis should be referred to Ophthalmology.

Low risk chest pain

- Chest pain in which ACS is thought to be unlikely but needs to be excluded.
- Patient is haemodynamically stable.
- Generally young people with no history of IHD and no significant risk factors (TIMI ≤ 1).
- Currently pain free with normal ECG.
- These patients should be discussed with an AEC clinician at the time of referral to confirm suitability for assessment there (if an ECG is not already available they will need to attend ED for this first).

Electrolyte abnormalities

- Patients with hypo- or hypernatraemia, or hypo- or hypercalcaemia, who require assessment of the cause of the derangement, or IV correction of the abnormality.
- Not suitable for those patients whose level of consciousness is impaired by the derangement, or who are likely to need admission due to the severity of electrolyte derangement.

Renal colic

- Patients with symptoms and signs suggestive of acute renal colic.
- Other causes unlikely from history and examination.
- If there is any haemodynamic instability, or any suspicion of ruptured or leaking AAA (particularly in those >60 years), these patients should be sent urgently to A&E.
- Consider giving diclofenac 100mg PR at the time of referral if no contraindication.

Hyperemesis gravidarum

- Symptoms and signs of hyperemesis gravidarum.
- < 20/40 pregnant.
- Other causes for symptoms unlikely from history and examination.
- Patient likely to need intravenous fluids and antiemetics (eg – signs of dehydration, not tolerating oral fluids or anti-emetics, continued nausea and vomiting associated with ketonuria, or weight loss >5% body weight despite oral anti-emetics).
- Patient is haemodynamically stable.

Acute headache

- Symptoms and signs of acute severe headache suggestive of possible subarachnoid haemorrhage.
- Patient is well, with a normal consciousness level and no focal neurology.
- There has been no history of loss of consciousness or seizure.
- Blood pressure is $\leq 160/100$.

Temporal arteritis

- Symptoms and signs suggestive of temporal arteritis.
- Other causes unlikely from history and examination.

Low risk GI bleed

- Suspected upper GI bleed – haematemesis, coffee ground vomiting, melaena.
- No known chronic liver disease, varices, or anticoagulation.
- Haemodynamically stable, not confused.
- No ongoing vomiting or melaena.

Transient loss of consciousness

- History of transient loss of consciousness.
- Haemodynamically stable.
- No new arrhythmia. Normal ECG (if performed).
- No history of TLOC during exertion.
- No new or unexplained breathlessness.

First fit

- First episode of a generalised convulsive seizure.
- No history of focal or partial onset before generalised seizure.
- No history of head injury.
- Pregnancy and alcohol withdrawal excluded.
- No PMH of HIV or immunocompromise, anticoagulation or bleeding disorder, or malignancy.
- No ongoing seizure activity, persistent headache, new focal neurology, or persistent altered mental state.

Pyrexia of unknown origin

- Fever or rigors without a clear focus of infection.
- Haemodynamically stable.

Painless jaundice

- New jaundice without pain.
- Haemodynamically stable.
- Bilirubin <150 (if bloods already available), coagulation screen normal, no acute derangement in renal function.
- Not pregnant, no evidence of encephalopathy, no evidence of cholangitis.

Referrals

- Telephone referrals welcome.
- For St Mary's Hospital – online referral system available.
- We hope to allow access to this via SystemOne in the near future.
- Demonstration of referral tool.

How will we know it's working?

What will we measure to judge AEC's success?

- Number of ED 4 hour target breaches.
- Conversion to admission rate of emergency attendances.
- Percentage of emergency patients with length of stay = 0 days.
- We expect an admission rate from AEC of approximately 10% (as predicted by the National AEC Network).

The future of AEC at Imperial

Lots of changes underway currently to develop the service:

- Increased engagement of primary care and community partners.
- Recruitment of expanded medical and nursing team.
- Refurbishment of SMH unit, with increased number of clinical spaces.
- Rolling out of online referral system to all primary care referrers.