IAEM Clinical Guideline

Management of syncope in the emergency department

Version 1

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Authors: Dr Áine Mitchell, in collaboration with Dr Rosa McNamara, Professor Rose Anne Kenny and the IAEM Guideline Development Committee.

DISCLAIMER

IAEM recognises that patients, their situations, Emergency Departments and staff all vary. These guidelines cannot cover all clinical scenarios. The ultimate responsibility for the interpretation and application of these guidelines, the use of current information and a patient's overall care and wellbeing resides with the treating clinician.
GLOSSARY OF TERMS

AAA: Abdominal aortic aneurysm
AFib: Atrial fibrillation
ARVC: Arrhythmogenic right ventricular cardiomyopathy
AV: Atrioventricular
βHCG: Beta human chorionic gonadotropin
BP: Blood pressure
BSL: Blood sugar level
CCF: Congestive cardiac failure
CM: Cardiomyopathy
ECG: Electrocardiogram
ED: Emergency Department
EF: Ejection fraction
ESC: European Society of Cardiology
FHx: Family history
GI: Gastrointestinal
GP: General practitioner
HCT: Haematocrit
HOCM: Hypertrophic obstructive cardiomyopathy
Hx: History
IAEM: Irish Association for Emergency Medicine
ICD: Implanted cardioverter defibrillator
IHD: Ischaemic heart disease
MI: Myocardial Infarction
OPD: Out-patient department
PCM: Physical counter-pressure manoeuvres
PE: Pulmonary embolus
PMHx: Past Medical History
PPM: Permanent pacemaker
RSA: Road safety authority
SAH: Sub-arachnoid haemorrhage
SBP: Systolic blood pressure
SCD: Sudden cardiac death
SVT: Supra-ventricular tachycardia
TIA: Transient ischaemic attack
T-LOC: Transient loss of consciousness
VT: Ventricular tachycardia
WPW: Wolff-Parkinson-White
INTRODUCTION

Syncope is defined as a transient loss of consciousness (T-LOC) due to cerebral hypoperfusion. It is characterised by a rapid onset, short duration and spontaneous complete recovery. Patients presenting with syncope and related disorders represent 2-3% of Emergency Department (ED) attendances. Syncope is a common presentation in all age groups, with 40% of the population experiencing syncope during their lifetime.

The differential for syncope is broad and it can be a daunting presentation to medically assess. Rarely, life-threatening conditions may present with syncope and it is crucial to identify these cases when they present to the ED. It is the acute underlying disease that most frequently determines short-term adverse events rather than the syncope itself. Differentiation between the different causes of syncope depends largely on thorough history taking and important features in the history are discussed below.

An algorithm to assist with distinguishing the causes of syncope is provided in the management section.

Patients, parents and caregivers are often very distressed by syncopal episodes. Detailed history taking, careful examination and appropriate investigations are paramount in alleviating these concerns.
PARAMETERS

Target audience: This guide is directed at health-care professionals engaged in the care of adult patients presenting to the ED with syncope.

Patient population: Adult patients presenting to the ED with possible syncope.

Exclusion criteria: While this guideline pertains to patients of any age presenting with syncope, a dedicated IAEM Paediatric Syncope guideline is available and should be referenced when caring for patients under 16 years of age presenting to the ED with possible syncope.

AIMS:

To provide an evidence based guide for the assessment and management of patients presenting to the ED with possible syncope.

Pages 6 & 8 can be printed for easy-access algorithms in the ED, if used in the context of the whole guideline.
ASSESSMENT:

If a patient presenting with possible syncope remains clinically unwell, they will need ongoing emergency care of their underlying condition.

In patient's presenting with possible syncope who are otherwise well, all patients at minimum need an assessment to determine probability of cardiogenic or secondary syncope (see syncope workup algorithm below). This should always include:

- Thorough history
- Cardiorespiratory examination, and other exam as dictated by history
- Electrocardiogram (ECG) evaluation

If indicated, work-up should also include:

- Lying-standing Blood Pressure if syncope related to standing or postural symptoms
- β human chorionic gonadotropin (βHCG) if patient is female of child-bearing age
- Bedside Blood sugar level (BSL)
- Patients who have a cardiac device should undergo prompt device interrogation.
- Other tests if investigating secondary syncope

Diagnostic radiology and laboratory tests such as chest X-ray, CT brain, routine blood haematology, biochemistry, D-dimer levels and cardiac markers have a low diagnostic yield, low impact on risk stratification of patients with syncope, and should not routinely be used unless specifically suggested by clinical evaluation.
**FIGURE 1: SUGGESTED SYNCOPE WORKUP**

**SYNCOPE WORKUP**

**HISTORY**

Please take a thorough history of the event, and collateral history.
- Position and activity prior, situation, prodrome.
- Eye witness account of syncopal event
- Post event symptoms

**Background Hx**
- Previous syncopes, timing, frequency.
- PMHX esp. IHD, epilepsy, parkinsons.
- Medications and alcohol
- Social and functional history in elderly

Family History: Blackouts, channelopathy, sudden cardiac death

**Systems review**

- Blood tests if investigating secondary syncope

**HISTORY RED FLAGS**

Supine syncope, exertional syncope
Sudden onset palpitations immediately preceding
Chest pain, dyspnoea, abdominal pain or headache
New unexplained breathlessness
Severe structural heart disease or coronary artery disease
CCF, EF <35% (high likelihood arrhythmogenic events), previous MI.

**HISTORY ORANGE FLAGS** (treat as RED FLAGS if assoc. with structural heart disease or abnormal ECG)

Seated syncope
Sudden drop without warning or short (<10sec) prodrome
FHx channelopathy, Sudden adult death

**HISTORY GREEN FLAGS**

3Ps - Provoking factor, typical prodrome and postural (from standing)
During a meal or postprandial
Triggered by cough, defaecation or micturition.
On head movement or pressure on carotid sinus
On standing from seated/lying.
Long history of recurrent (GREEN flag) syncope with similar characteristics of the current episode

**EXAMINATION**

Cardiorespiratory exam
-/- Neurological / other as dictated by history and systems review.

**EXAMINATION RED FLAGS**

Unexplained SBP <90mmHg in the ED
Undiagnosed systolic murmur
Evidence of GI bleed
Persistent Bradycardia <40bpm in awake state and in absence of physical training.

**EXAMINATION GREEN FLAG** Normal Exam

**INVESTIGATIONS**

ECG always
Lying - Standing BP (syncope from standing)
BSL and βHCG

Other: Blood tests if investigating secondary syncope

**ECG RED FLAGS**

Changes consistent with acute ischaemia
AV block - Mobitz II or third-degree
AFib <40bpm
Persistent sinus brady <40bpm, sinus pauses >3 sec
Bundle branch block, Bi-, Tri-fasicular block
Sustained and non-sustained VT
Prolonged QTc (>460ms), Type 1 Brugada pattern, HOCM criteria.
Dysfunction of an ICD or PPM

**ECG ORANGE FLAGS** (treat as RED FLAGS if history suggesting arrythmic syncope)

AV Block - Marked first-degree or Mobitz I
Mild bradycardia: AFib/sinus <50
Paroxysmal SVT or AFib
ARVC, atypical Brugada patterns, short QTc (<340ms), WPW

**ECG GREEN FLAG** Normal ECG

**OTHER INVESTIGATIONS** (if indicated) RED FLAGS

- Anaemia, HCT <30%
- Electrolyte disturbance

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**CAUTION**

Attributing injuries in older patients to falls and failing to recognise amnesia associated with syncope is common in older people.

It is good practice to perform a baseline ECG on all patients presenting with falls aged ≥65 years.

This patient group should at minimum have a syncopal diagnosis considered.
MANAGEMENT:

In the Syncope workup algorithm, clinical features are broken into high, moderate and low risk features.

Red flags: High-risk features that suggest a serious condition in patients with syncope at initial evaluation in the emergency department.

Amber flag: These features should be treated as high risk if associated with other concerning features, i.e. known structural heart disease, an abnormal ECG or a history suggesting arrhythmic syncope. **Patient’s with high risk features require an intensive diagnostic approach and likely need urgent treatment and admission.**

Green flags: Low-risk features (that suggest a benign condition) in patients with syncope at initial evaluation in the emergency department. These patients do not need further diagnostic tests in the ED as they are likely to have reflex, situational, or orthostatic syncope. In general, if they are currently well, these patients can be discharged without follow up. They may benefit from reassurance or patient education. Low-risk patients can be referred to the outpatient syncope clinic for therapy purposes, if needed.

For patients with neither High-risk nor Low-risk features, while there is no evidence they benefit from an inpatient admission, European Society of Cardiology (ESC) guidance advices they require an expert syncopal opinion. In the absence of a local Syncope unit or appropriate alternative local service (see special considerations below), these patient’s may require admission.

See Syncope guideline below for further classification of syncope and T-LOC.
**FIGURE 2: SYNCOPE MANAGEMENT GUIDELINE**

**SYNCOPE GUIDELINE**

**Is it syncope?**

- **T-LOC**
  - Transient loss of consciousness
  - If not, Falls: need gait assessment
  - Altered consciousness (metabolic / toxicology)
  - TIA
  - Daytime sleepiness
  - Cataplexy

**Syncope**

- **What is the underlying cause of syncopal event?**
  - Epileptic seizure: aura, lateral tongue biting, incontinence (can be present in cardiogenic syncope), post-event confusion.
  - Psychogenic: prolonged, eyes closed, recurrent, non-injurious, aborted sudden cardiac death (SCD) / coma

**REFLEX SYNCOPE**

- **3 P’s**: Provocation, Prodrome, Postural
  - Vasovagal
    - Unpleasant sensation: sight, smell, touch, pain, emotional distress, fear
  - Situational
    - Cough, GI stimulation, micturition.
    - Post-prandial, post-exertional.
  - Carotid sinus hypersensitivity
    - Head turning, tight collars

**ORTHOSTATIC HYPOTENSION**

- Occurs on standing
- Primary autonomic failure
  - Neurological
- Secondary autonomic failure
  - Diabetes, amyloid
  - Alcohol
  - Drug-induced: anti-HTN meds, anti-depressants, glaucoma drops.
- Volume depletion
  - Diarrhoea, GI bleed, leaking AAA

**CARDIOGENIC / UNKNOWN WITH HIGH RISK OF CARDIAC**

- RED FLAGS (see above) suggesting arrhythmia or structural heart disease
- Bradycardia
  - Sinus node disease, AV block
  - Bi/Trifasicular block
  - Pacemaker malfunction
- Tachycardia
  - SVT, VT, WPW
  - Brugada, ARVC
  - Prolonged QT
- Structural Heart Disease
  - Ischaemic CM, HOCM, Congenital, Aortic stenosis

**SECONDARY SYNCOPE**

- Based on information from systems review.
- Leaking AAA
- Aortic dissection
- Acute MI
- PE
- SAH
- Acute blood loss
- GI bleed
- Diarrhoea and vomiting

**CAUSE**

**CLUE**

**FURTHER CLASSIFICATION**

**ED TREATMENT**

**DISPOSITION**

- Usually home with simple advice
- +/- GP follow up
- If severe syncope (high risk / high frequency), patients may require Syncope Unit input (as if reflex asystole may benefit from PPM)
- Admit if ongoing symptomatic.
  - If safe for discharge, offer simple advice: increase fluid, salt intake, PCM.
  - May require Syncope unit input for medication rationalisation, autonomic function testing and possible treatment
- Admit if indication for: PPM / ICD / ablation / valve repair etc
- Arrange prompt device interrogation if PPM / ICD
- In absence of local syncope unit, patients unable to be classified as low risk, may require further in-patient workup.
- Admit for treatment of underlying condition.
- Emergent treatment of underlying condition.
SPECIAL CONSIDERATIONS

SYNCOPE UNIT

A syncope unit is defined as a facility featuring a standardised approach to the diagnosis and management of T-LOC and related symptoms, with dedicated staff and access to appropriate diagnostics and therapies. European guidelines developed by the ESC recommend availability of a Syncope Unit referral process as this has been shown to provide better management, allow for reduction in admissions and reduction in low yield investigations of patents presenting with syncope.

If a Syncope Unit is not available to your local Emergency Department and patients are considered safe for discharge, but would benefit from further specialist input i.e. high frequency or high risk vasovagal syncope; some orthostatic hypotension patients; patients that cannot be classified as low risk (green flag) syncope, this follow up will need to be arranged within local services provision. Specialised syncope units are considered best practise, and local discussion should be commenced to see if this service could be developed locally. In the absence of a specialised service, local guidelines will need to be developed to decide on best care for those patients not considered low risk and safe for discharge to their GP. This may be by referral to one of local cardiology, geriatric or neurology out-patient (OPD) services, as applicable and available, or failing safe and timely availability of above, may require hospital admission for further management.

FITNESS TO DRIVE

Consider patient’s fitness to drive if considered safe for discharge. You can access national driving recommendations at RSA.ie: “Sláinte agus Tiomáint” Medical fitness to drive 2017 PDF guideline. Page 21-23 relate to syncopal presentations.
FURTHER READING

Guidelines for the diagnosis and management of syncope (version 2018); developed by Task Force for the Diagnosis and Management of Syncope, European society of cardiology. Available from https://www.escardio.org/Guidelines/Clinical-Practice-Guidelines/Syncope-Guidelines-on-Diagnosis-and-Management-of


For patient information leaflets for reflex syncope and psychogenic pseudosyncope, see: Practical Instructions for the 2018 ESC Guidelines for the diagnosis and management of syncope. Available from https://academic.oup.com/eurheartj/article/39/21/e43/4939242#117347704

RSA Sláinte agus Tiomáint Medical Fitness to Drive Guidelines 2017, Road Safety Authority. Syncope recommendations available from page 21: http://www.rsa.ie/Documents/Licensed%20Drivers/Sláinte%20Agus%20Tiomáint%202017%20i.pdf