

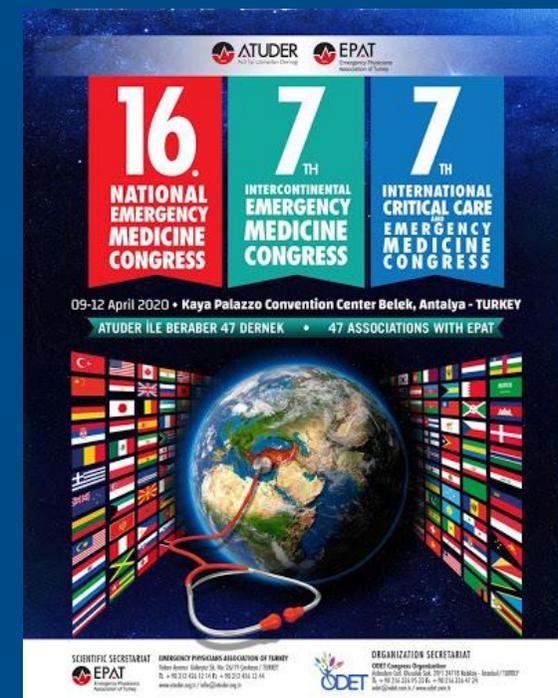
# MANAGEMENT OF SYNCOPE: NEW GUIDELINES FOR THE ED

**FRAN MOYA MD FFSEM**

**CLINICAL LEAD  
INTERNATIONAL MEDICAL SERVICES  
CONSULTANT IN EMERGENCY, SPORT AND EXERCISE MEDICINE  
VITHAS XANIT INTERNATIONAL HOSPITAL  
MALAGA SPAIN**

**BOARD MEMBER SPANISH SOCIETY OF EMERGENCY MEDICINE  
( SEMES )**

**MEMBER OF THE RESEARCH COMMITTEE EUROPEAN SOCIETY OF  
EMERGENCY MEDICINE ( EUSEM )**



Sociedad Española de  
Medicina de Urgencias  
y Emergencias



MODERN MEDICINE HAD TO START SOMEWHERE



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FROM STEVEN  
SODERBERGH

# THE KNICK™

FRI 8/8, 10P

**CINEMAX**

- **Overview**
- **Syncopal Diagnosis and Management in ED's**
- **New Syncopal Care Pathway in the ED's**
- **The Future**



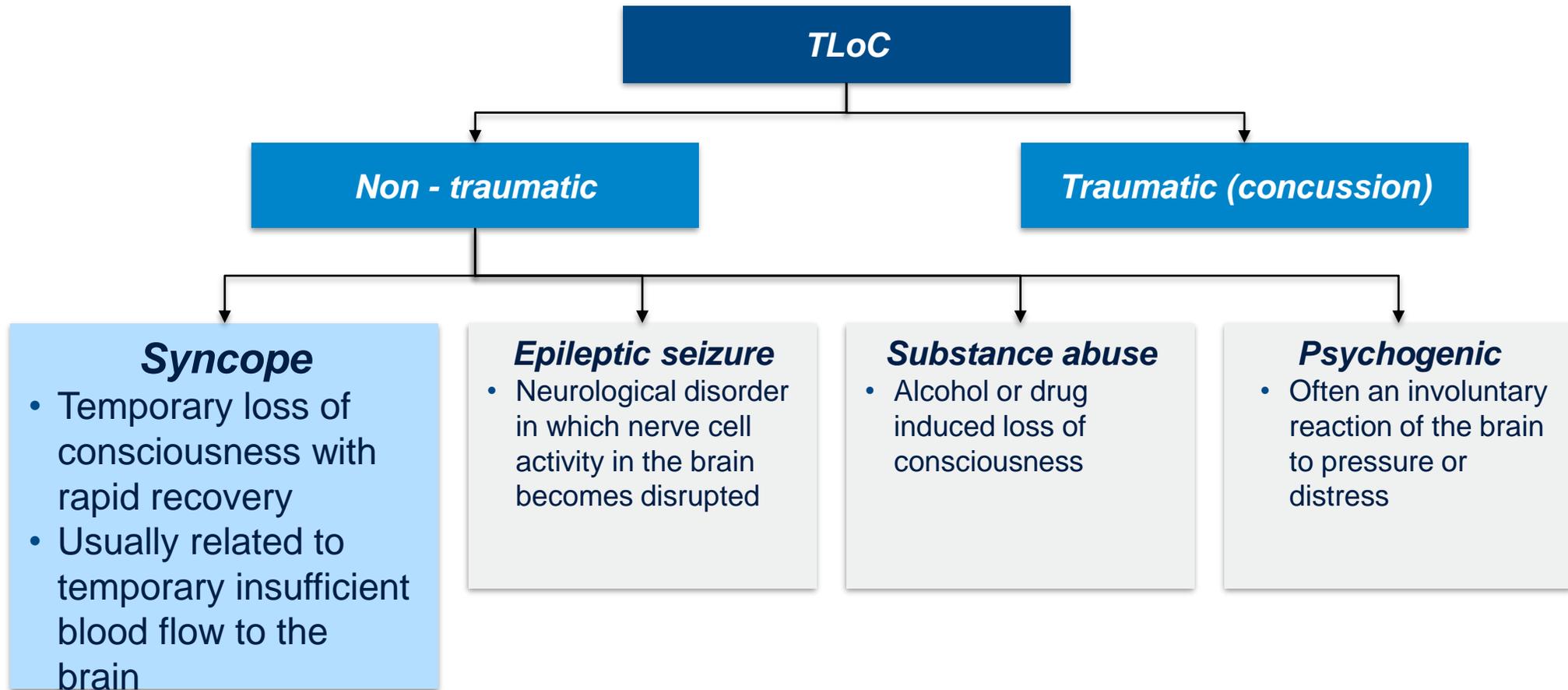
# SYNCOPE OVERVIEW



# SYNCOPE DEFINITION

## TLoC Definition<sup>1</sup>

A loss of consciousness with complete recover, usually spontaneous in onset



A leading cause of undiagnosed syncope is heart-related.<sup>2</sup>

Arrhythmias are most common cause of cardiac syncope.<sup>1</sup>

1. Moya A. et al. Guidelines for the diagnosis and management of syncope (version 2009). European Heart Journal; 2009

2. Soteriades ES, Evans JC, Larson MG, et al. Incidence and prognosis of syncope. N Engl J Med. 2002;347(12):878-885. [Framingham Study Population]



# THE SYNCOPE CHALLENGE

## Magnitude

40% of the population will have at least one syncope event.<sup>1</sup>

## Inpatient Challenge

Approximately half of patients admitted to hospital leave without a diagnosis.<sup>2</sup>

## Patient's Frustration

In reaching a diagnosis patients see 3 different specialists, undergo 13 tests, and 1/3 have significant associated trauma.<sup>4</sup>

## Cardiac Causes

Cardiac syncope is common, doubles the risk of death, and is associated with a 6-month mortality rate greater than 10%.<sup>5</sup>

<sup>1</sup> Kenny RA, et al. eds. The evaluation and treatment of syncope. *Futura*. 2003:23-27.

<sup>2</sup> Mendu M, et al. *Arch Intern Med*. 2009;169:1299-1305.

<sup>3</sup> Edvardsson N., et al. Costs of unstructured investigation of unexplained syncope : insights from a micro-costing analysis of the observational PICTURE registry. 1141–1148 (2015).

<sup>4</sup> Edvardsson N, et al. *Europace*. 2011;13:262-9269.

<sup>5</sup> Soteriades ES, et al. *N Engl J Med*. 2002;347:878-885.



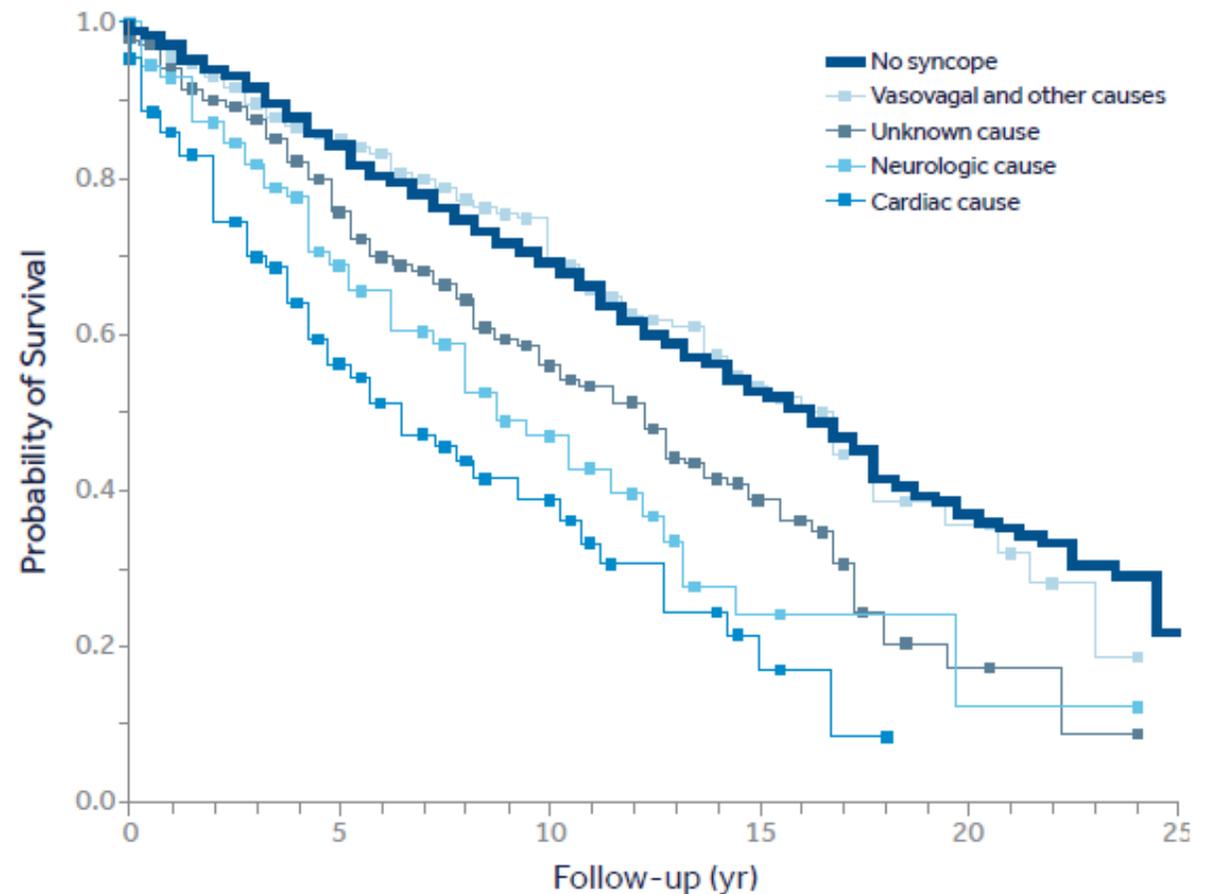
# SYNCOPE

## THE CAUSE MATTERS

### Cardiac syncope<sup>1</sup>:

- Carries a 6-month mortality rate of greater than 10%
- Doubles the risk of death

### Overall Survival of Participants with Syncope According to Cause



1. Soteriades ES, et al. *N Engl J Med.* 2002;347:878-885.

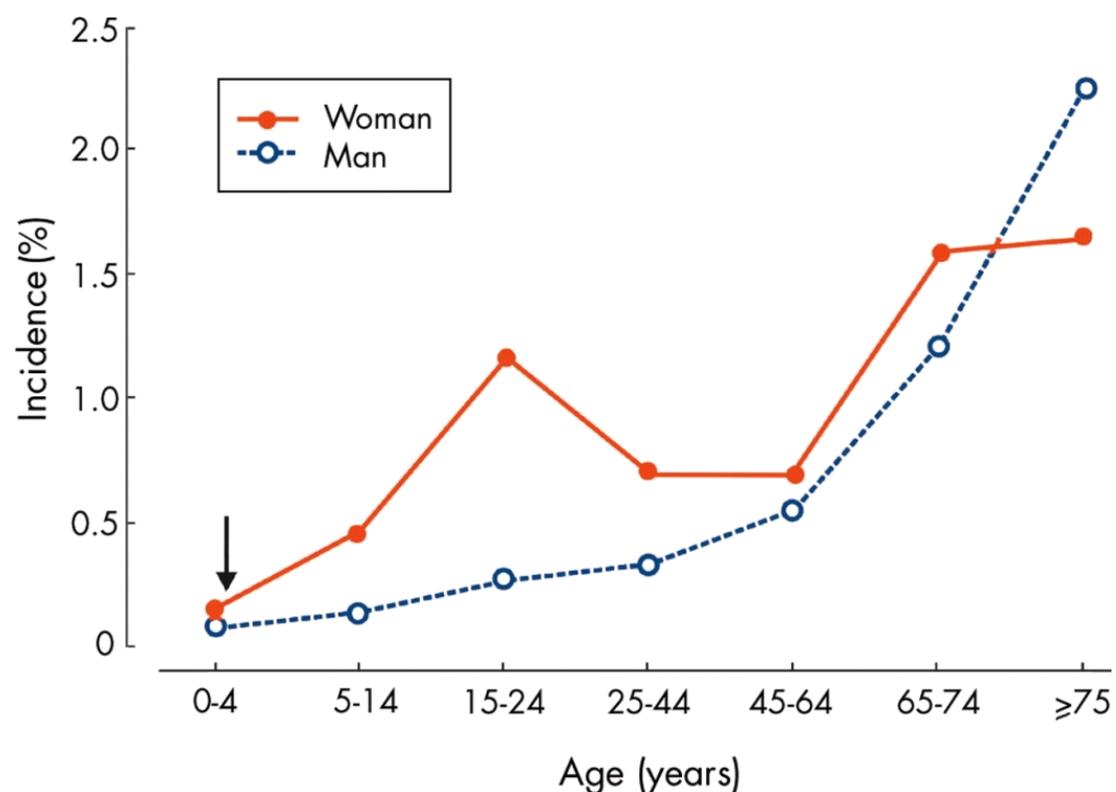


# SYNCOPE

## A GROWING CHALLENGE FOR THE SYSTEM

- 50% of patients admitted to hospital for syncope-related events are >75 years of age<sup>1</sup>
- 10% of falls by elderly are attributed to syncope<sup>1</sup>
- With an aging population, the prevalence of syncope is likely to increase<sup>2</sup>

### Prevalence of Syncope based on Age and Sex of Patients



<sup>1</sup> Weiling W, Ganzeboom K, Saul JP. Heart 2004;90:1094-1100

<sup>2</sup> Campbell A, et al. Age and Ageing. 1981;10:264-270.



# SYNCOPE AND TLOC IN ED'S

## THE PRESSURES

- Syncope is responsible for 3-5% ED visits with a hospitalization rate of 40% and an average hospital stay of 5.5 days ( 1 )
- Estimated presentation rate of falls and syncope 20-45% ( 2 )
- Syncope and collapse is the 6<sup>th</sup> most common reason for acute hospital attendance ( 2 )
  - Limited time to diagnose and treat
  - Some with high risk features
  - Some with accompanying minor injuries
  - No opportunity for further investigation in the ED
  - Patients often re-present
- Significant drain on bed days and referrals when treated as in-patient ( 3 )

1. Annals of Physiology 2004
2. Kenny, RA, O'Shea, D, Walker, HF. (2002). Impact of a dedicated syncope and falls facility for older adults on emergency beds. *Age and Ageing*, 31: 272-275
3. RA Kenny *et al* (2015). Syncope Unit :rationale and requirement – the European Heart Rhythm Association position statement endorsed by the Heart Rhythm Society



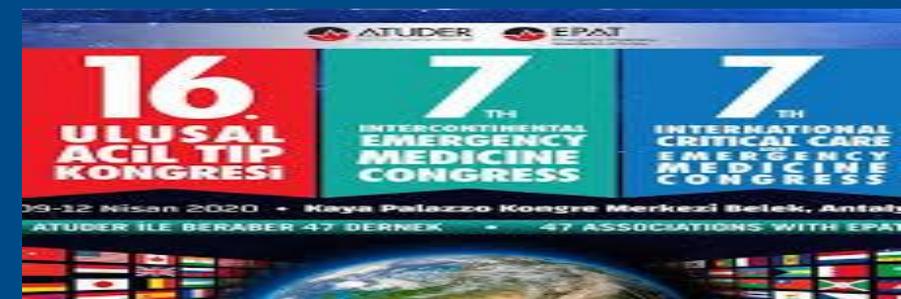
# SYNCOPE AND TLOC IN ED'S

## THE PRESSURE IN NUMBERS

- Spain: 26 million visits to Hospital Emergency Departments year 2017
- 3-5 % due to Syncope means between 780000 and 1300000 patients with Syncope presentation in EDs in Spain year 2017
- 40% were admitted meaning between 312000 and 520000 Hospital Admissions due to Syncope

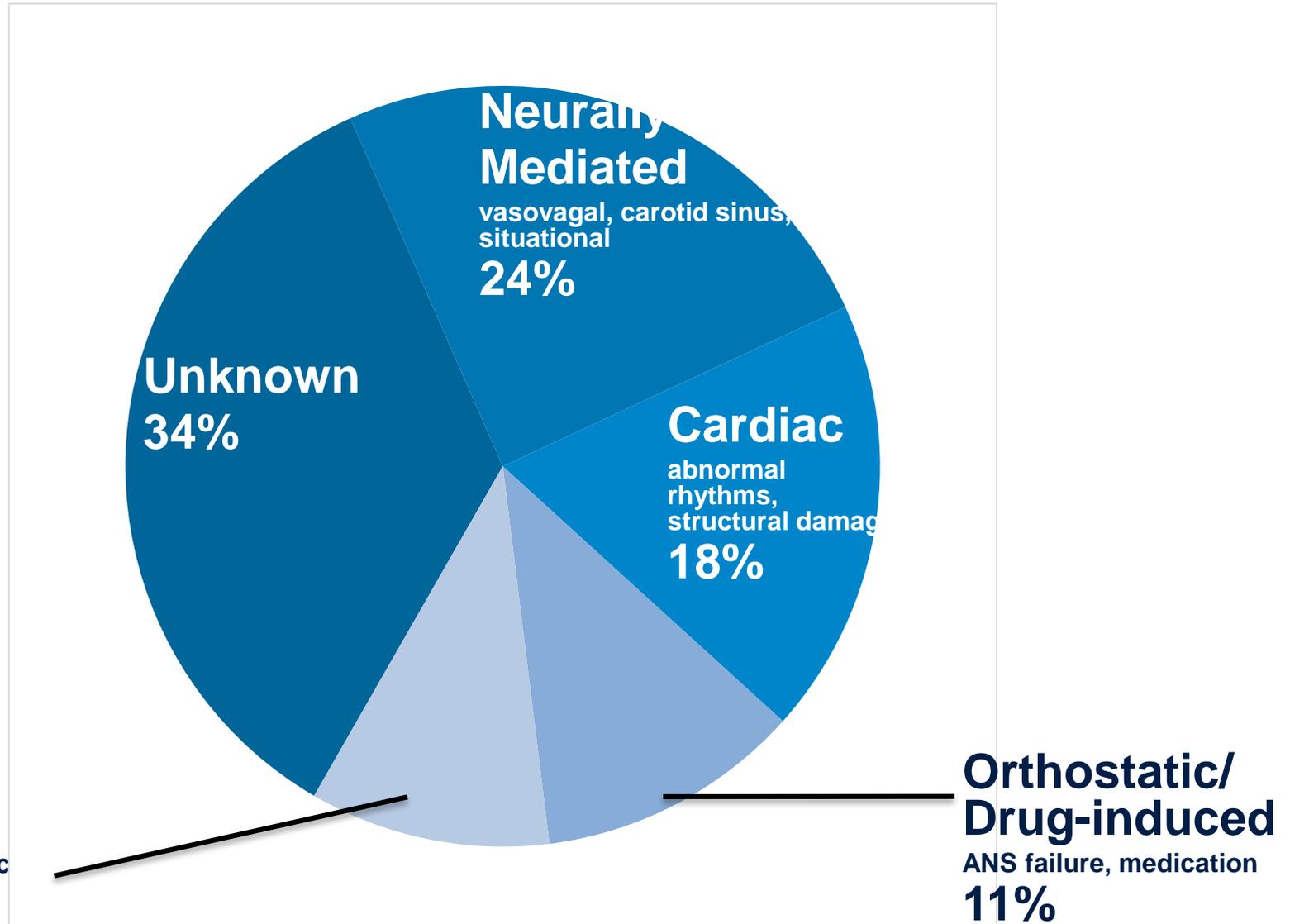


# SYNCOPE DIAGNOSIS AND MANAGEMENT IN ED'S



# UNEXPLAINED SYNCOPE + CARDIAC SYNCOPE OVER 50% OF PATIENTS

Syncope  
remains  
unexplained in  
approximately  
1/3 of cases<sup>1</sup>



1. Linzer M, et al. *Ann Intern Med.* 1997;126:989-996.



# SYNCOPE DIAGNOSIS

## TESTING OPTIONS AND THEIR DIAGNOSTIC YIELDS

Test/Procedure	Yield
ECG	2-11% <sup>1</sup>
Holter Monitoring	2% <sup>2</sup>
External Loop Recorder	20% <sup>3</sup>
Tilt Table	11-87% <sup>4,5</sup>
EP Study without structural heart disease	11% <sup>6</sup>
Neurological (CT scan, carotid doppler)	0-4% <sup>5</sup>
Reveal ICM	43-88% <sup>3,7,8</sup>

1. Kapoor WN. Diagnostic evaluation of syncope. Am J Med. 1991;90:91-106.

2. Krahn et al. Recurrent syncope. Experience with an implantable loop recorder. Cardiol Clin. 1997;15:313-326.

3. Krahn et al. Cost implications of testing strategy in patients with syncope (RAST). J Am Coll Cardiol. 2003;42:495-501.

4. Kapoor. Evaluation and outcome of patients with syncope. Medicine (Baltimore). May 1990;69:160-175.

5. Kapoor. Evaluation and management of the patient with syncope. JAMA. 1992;268:2553-2560.

6. Linzer et al. Diagnosing syncope. Part 2: unexplained syncope. Clinical efficacy assessment project of the american college of physicians. Ann Intern Med. 1997;127:76-86.

7. Krahn et al. Final results from a pilot study with an implantable loop recorder to determine the etiology of syncope in patients with negative noninvasive and invasive testing. Am J Cardiol. 1998;82:117-119.

8. Krahn et al. Use of an extended monitoring strategy in patients with problematic syncope. Reveal Investigators. Circulation 1999;99:406-410.



# SYNCOPE IN ED'S

## MANAGEMENT CHALLENGE

European Heart Journal (2016) 37,  
1493–1498

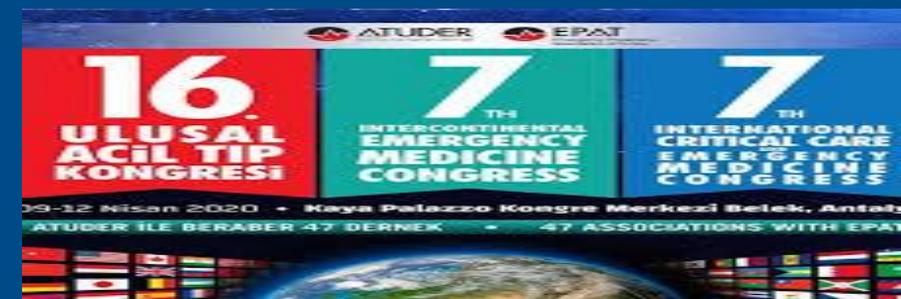
doi:10.1093/eurheartj/ehv378

The optimal Emergency Department (ED) evaluation of syncope is uncertain. Research reports from multiple countries suggest extensive practice variation, high costs, and questionable benefit associated with current approaches. Moreover, only a few of the recommendations from international syncope guidelines deal with ED management.

For example, the European Society of Cardiology Guidelines ( 2009 ), which are the most inclusive syncope Guidelines, do not address the ED management. This could be due to limited evidence on how to stratify the risk and decide on disposition of these patients in the ED.



# NEW SYNCOPE CARE PATHWAYS IN ED'S





# 2018 ESC Guidelines for the diagnosis and management of syncope

**The Task Force for the diagnosis and management of syncope of the European Society of Cardiology (ESC)**

**Developed with the special contribution of the European Heart Rhythm Association (EHRA)**

**Endorsed by: European Academy of Neurology (EAN), European Federation of Autonomic Societies (EFAS), European Federation of Internal Medicine (EFIM), European Union Geriatric Medicine Society (EUGMS), European Society of Emergency Medicine (EuSEM)**

**Authors/Task Force Members: Michele Brignole\* (Chairperson) (Italy), Angel Moya\* (Co-chairperson) (Spain), Frederik J. de Lange (The Netherlands), Jean-Claude Deharo (France), Perry M. Elliott (UK), Alessandra Fanciulli (Austria), Artur Fedorowski (Sweden), Raffaello Furlan (Italy), Rose Anne Kenny (Ireland), Alfonso Martín (Spain), Vincent Probst (France), Matthew J. Reed (UK), Ciara P. Rice (Ireland), Richard Sutton (Monaco), Andrea Ungar (Italy), and J. Gert van Dijk (The Netherlands)**

\* Corresponding authors: Michele Brignole, Department of Cardiology, Ospedali Del Tigullio, Via Don Bobbio 25, IT-16033 Lavagna, (GE) Italy. Tel: +39 0185 329 567, Fax: +39 0185 306 506, Email: mbrignole@asl4.liguria.it; Angel Moya, Arrhythmia Unit, Hospital Vall d'Hebron, P Vall d'Hebron 119-129, ES-08035 Barcelona, Spain. Tel: +34 93 2746166, Fax: +34 93 2746002, Email: amoyamitjans@gmail.com.

ESC Committee for Practice Guidelines (CPG) and National Cardiac Societies document reviewers: listed in the Appendix.

<sup>1</sup> Representing the European Academy of Neurology (EAN)

<sup>2</sup> Representing the European Federation of Internal Medicine (EFIM)

<sup>3</sup> Representing the European Society of Emergency Medicine (EuSEM)

ESC entities having participated in the development of this document:

Associations: European Heart Rhythm Association (EHRA)

Councils: Council on Cardiovascular Nursing and Allied Professions, Council for Cardiology Practice, Council on Cardiovascular Primary Care

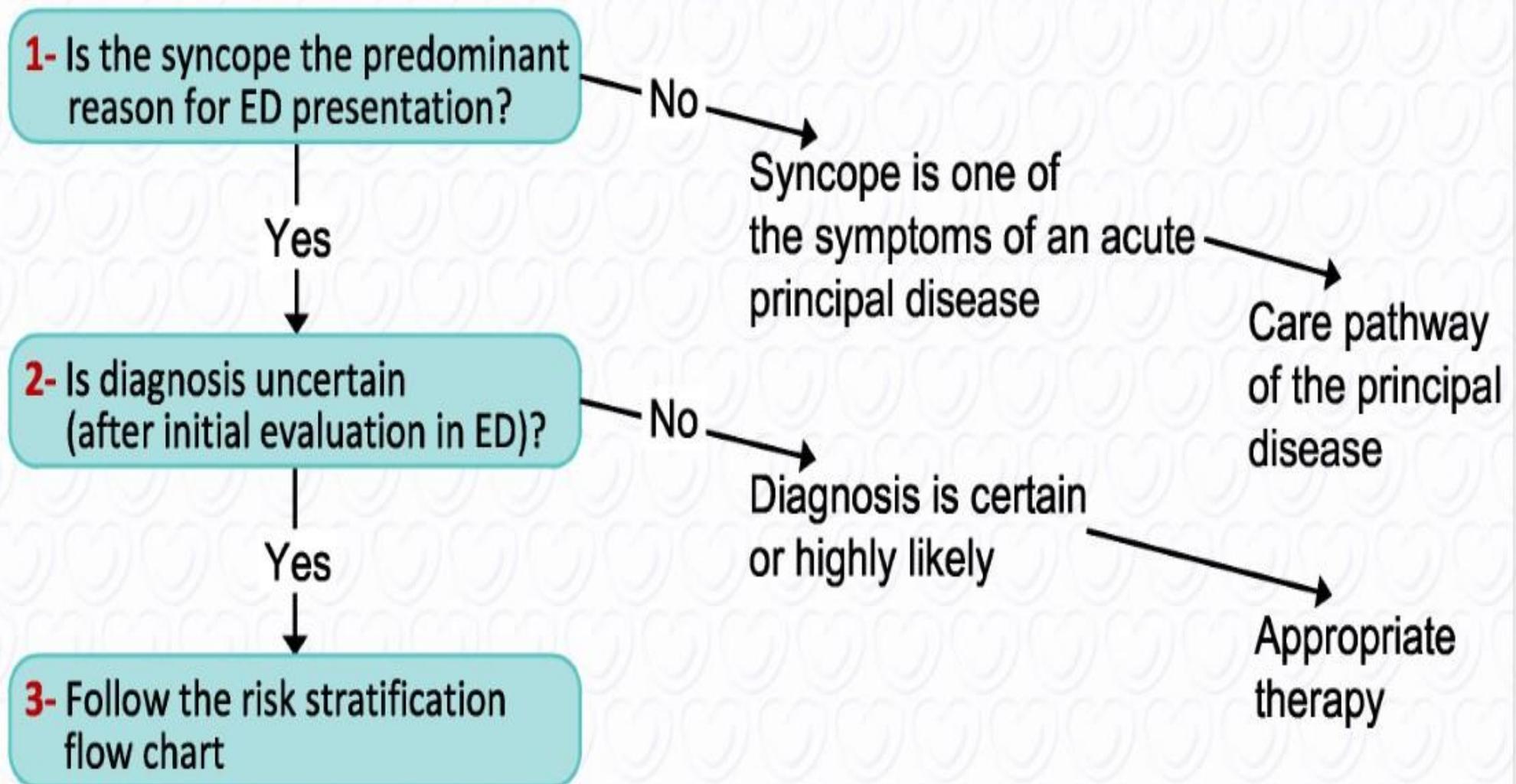
Working Groups: Myocardial and Pericardial Diseases

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# Management of syncope in the ED



# Risk stratification at the initial evaluation (I)

Low-risk	High-risk (red flag)
<b>Syncopal event</b>	
<ol style="list-style-type: none"><li>1. Associated with prodrome typical of reflex syncope (e.g. light-headedness, feeling of warmth, sweating, nausea, vomiting)</li><li>2. After sudden unexpected unpleasant sight, sound, smell, or pain</li><li>3. After prolonged standing or crowded, hot places</li><li>4. During a meal or postprandial</li><li>5. Triggered by cough, defaecation, or micturition</li><li>6. With head rotation or pressure on carotid sinus (e.g. tumour, shaving, tight collars)</li><li>7. Standing from supine/sitting position</li></ol>	<p><b>Major</b></p> <ol style="list-style-type: none"><li>1. New onset of chest discomfort, breathlessness, abdominal pain, or headache</li><li>2. Syncope during exertion or when supine.</li><li>3. Sudden onset palpitation immediately followed by syncope</li></ol> <p><b>Minor</b> (high risk only if associated with structural heart disease or abnormal ECG):</p> <ol style="list-style-type: none"><li>1. No warning symptoms or short (&lt;10 s) prodrome</li><li>2. Family history of SCD at young age</li><li>3. Syncope in the sitting position</li></ol>

# Risk stratification at the initial evaluation (2)

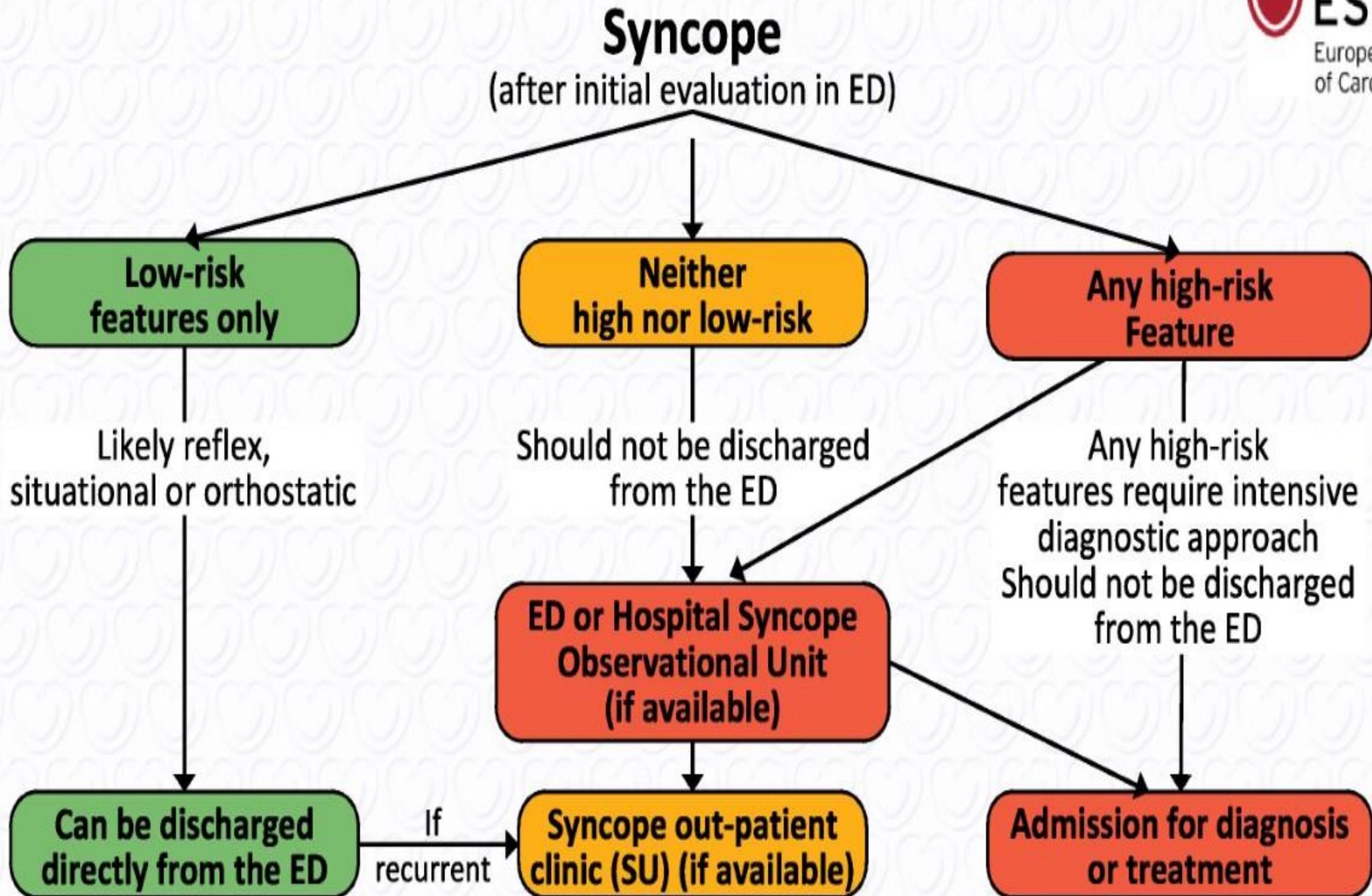
Low-risk	High-risk (red flag)
<b>Past medical history</b>	
<ol style="list-style-type: none"><li>1. Long history (years) of recurrent syncope with low-risk features with the same characteristics of the current episode</li><li>2. Absence of structural heart disease.</li></ol>	<b>Major</b> <ol style="list-style-type: none"><li>1. Severe structural or coronary artery disease (heart failure, low LVEF or previous myocardial infarction)</li></ol>
<b>Physical examination</b>	
<ol style="list-style-type: none"><li>1. Normal examination.</li></ol>	<b>Major</b> <ol style="list-style-type: none"><li>1. Unexplained systolic BP in the ED &lt;90 mmHg</li><li>2. Suggestion of gastrointestinal bleed on rectal examination</li><li>3. Persistent bradycardia (&lt;40 b.p.m.) in awake state and in absence of physical training</li><li>4. Undiagnosed systolic murmur</li></ol>

# Risk stratification at the initial evaluation (3)

Low-risk	High-risk (red flag)
<b>ECG</b>	
1. Normal ECG	<b>Major</b> <ol style="list-style-type: none"><li>1. ECG changes consistent with acute ischaemia</li><li>2. Mobitz II second- and third-degree AV block</li><li>3. Slow AF (&lt;40 b.p.m.)</li><li>4. Persistent sinus bradycardia (&lt;40 b.p.m.)</li><li>5. Bundle branch block or IVCD</li><li>6. Q waves consistent with CAD or cardiomyopathy</li><li>7. Sustained and non-sustained VT</li><li>8. Dysfunction of a pacemaker or ICD</li><li>9. Type 1 Brugada pattern</li><li>10. Long QT</li></ol>

# Risk stratification at the initial evaluation (4)

Low-risk	High-risk (red flag)
<b>ECG</b>	
1. Normal ECG	<b>Minor</b> (only if history suggests arrhythmic syncope): <ol style="list-style-type: none"><li>1. Mobitz I second-degree AV block and 1° degree AV block with markedly prolonged PR interval</li><li>2. Asymptomatic inappropriate mild sinus bradycardia (40–50 b.p.m.), or slow AF (40–50 b.p.m.)</li><li>3. Paroxysmal SVT or atrial fibrillation</li><li>4. Pre-excited QRS complex</li><li>5. Short QTc interval (<math>\leq 340</math> ms)</li><li>6. Atypical Brugada patterns</li><li>7. Negative T waves suggestive of ARVC</li></ol>



# SYNCOPE 2018-2020

## AHA VS ESC

### SYNCOPE BASEL XI GROUP

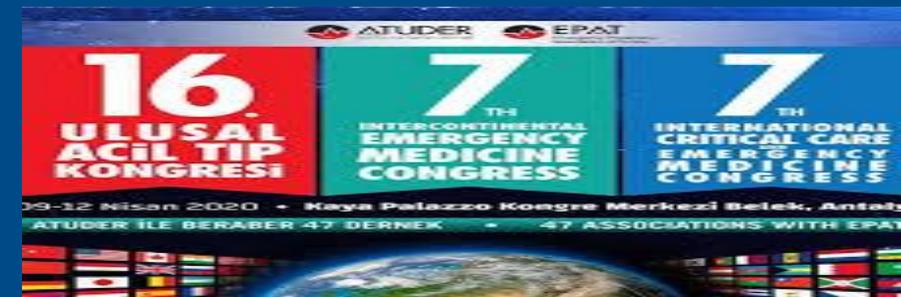
#### Conclusions

- AHA and ESC syncope guidelines recommend admission based on very different criteria:
  - ESC guidelines : syncopal event, risk factors, previous cardiac history, physical examination and ECG criteria
  - AHA guidelines focus on serious conditions previously known or diagnosed in the ED
  - → Very different admission patterns
- The physician's behavior often did not overlap with guidelines recommendations but they discharged patients in a safe manner.
  - Utility of integrating experienced physicians' judgment in the overall evaluation (Canadian Syncope Risk Score<sup>1</sup>).



Jeanne DU FAY DE LAVALLAZ  
(Basel - CH)

# THE FUTURE





# EUSEM

EUROPEAN SOCIETY FOR EMERGENCY MEDICINE

## SYNCOPE INTEREST GROUP



# MANAGEMENT OF THE PATIENT WITH SYNCOPE IN THE EMERGENCY DEPARTMENT

Based on ESC 2018 Guidelines for the diagnosis and treatment of syncope

## AUTHORS

Alfonso Martín Martínez.

*Head of Emergency Department, Severo Ochoa University Hospital, Madrid.*

*Member of the ESC 2018 Syncope Guidelines Working Group.*

Ángel Moya Mitjans.

*Cardiology Department, Dexeus University Hospital, Barcelona. ESC 2018 Syncope Guidelines Working Group Coordinator.*

Francisco Moya Torrecilla.

*Director of International Medical Services, Vithas Xanit International Hospital, Malaga.*

Coral Suero Méndez.

*Director of the Medical Assessment Unit, Intensive Care Unit and Emergency Department, Axarquía Hospital, Malaga.*





QUESTIONS ?

