

# CLINICAL PATHWAY

## Heart & Vascular Health



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## Syncope Clinical Pathway

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**CHRISTIANA CARE**  
HEALTH SYSTEM

# Syncope Clinical Pathway

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## INTRODUCTION

Syncope is a common condition which can occur in up to 40% of the general population at least once during a life time. It can be caused by a benign condition but may also be a sign of a serious illness which can make it challenging to diagnose. Since Syncope is a symptom and not a disease itself, it can be difficult to triage and assess risk and a structured, evidence based approach is critical to providing appropriate, cost effective care.

A multidisciplinary team including Emergency Medicine, Cardiology and Hospitalist representation was formed to develop a clinical care pathway for the diagnosis and optimal treatment for patients presenting with a primary diagnosis of Syncope.

One of the initial steps taken to identify care opportunities for Syncope patients was to complete a thorough gap analysis using recent data and observations. Opportunities identified included:

- 1) Awareness that a large range of conditions may cause syncope. The objective of the initial evaluation is to assess patients at high risk for adverse events due to syncope or the underlying cause.
- 2) Currently, 40% of patients are admitted to observation status across multiple units resulting in variations in care, unnecessary, low yield testing and excess utilization of hospital resources. There is no clinical decision support to guide testing choice.
- 3) At Christiana Care, patients managed in "fast track" units (Cardiology Short Stay, ED Observation, Medical Observation) focused on rapid diagnosis and treatment have optimized care to include less low yield diagnostic testing and shorter length of stay.
- 4) There is currently no mechanism to aid in streamlined outpatient follow up for low risk syncope patients. Part of the pathway focus will be to ensure that follow up takes place.



## Scope of this Pathway

The pathway encompasses patients presenting with symptoms of syncope in the inpatient, observation and ED care settings and makes guideline supported recommendations for care and treatment from admission to discharge.

## Pathway Contacts

The content of this pathway is developed and maintained by the Heart & Vascular Service Line within Christiana Care Health System. Questions or feedback about the content may be directed to:

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## CLINICAL PATHWAY

The Syncope clinical pathway developed for Christiana Care is outlined on the subsequent pages to include pathway goals, metrics, workflows and algorithms. The focus of the pathway is to facilitate streamlined, guideline based decision making from admission to discharge for syncope patients using clinical decision support tools for providers and streamlined communication to patients undergoing evaluation.

### Pathway Goals:

- 1) Utilize Cerner Pathways Tool to standardize assessment and decision making
- 2) Reduce inappropriate hospitalizations & low yield testing
- 3) Optimize Observation Stay
- 4) Support transition to outpatient setting for management and follow up care
- 5) Reduce costs associated with admission & unnecessary/redundant testing

### Pathway Metrics:

- 1) % adoption of pathway (use of syncope innovations tool)
- 2) Decrease in utilization of low yield tests not ordered/completed (e.g. CT, MRI, ECHO, EEG)
- 3) Reduction in LOS, ED LOS and variability in LOS across all inpatient units
- 4) Increase % of averted admissions (Low risk patients discharged from the ED)
- 5) No increase in readmission rate (signal of worsening harm)
- 6) Decrease in costs per case



# Clinical Pathway Flow:

## Diagnosis & Admission Criteria

To consider admission, patient would normally present with syncope of unknown etiology AND displays one of the following symptoms on assessment:

- **Signs & Symptoms of Seizure- Aura consistent with Seizure, Tonic-Clonic movements > 15-30 Seconds, Tongue Biting, Prolonged post event confusion or lethargy**
- **Signs & Symptoms of underlying Cardiac Etiology**
  - Concerning ECG (ST-Elevation, Abnormal QT waves, etc.)
  - Syncope during extreme exertion or supine
  - Syncope associated with palpitations or chest pain
  - History of CHF, CAD or structural heart disease
  - Family history of sudden death
  - Significant murmur
  - Absence of prodrome
- **Multiple Medical Comorbidities**

If patient presents with syncope AND has one of the following, patient could be considered low risk and a candidate for discharge and outpatient follow up:

- **Typical Prodrome**
- **Noxious stimulus as a precipitant**
- **Positional History**
- **History of long period of standing**
- **Trigger Situation**

If the decision is made to admit the patient, the patient should be admitted to observation status under Cardiology or Medicine as guided by symptoms and comorbidities.



Observation Care

PROCESS	
PATIENT OUTCOMES	Hemodynamically stable. Patient tolerating activity level. Absence of presyncopal complaints (to include dizziness, lightheadedness /syncope episodes and unstable arrhythmias) Establish cause of syncope- orthostatic, cardiac, neurologic, vasovagal
ASSESSMENT/ MEASUREMENTS	System assessment every 8 hours. Check orthostatics on admit and once a shift Orthostatics in one arm in ALL 3 POSITIONS SUPINE, SIT, & 3 minutes STANDING; If symptomatic, document accordingly. Vitals including O2 sats every 4 hours Monitor vitals, and blood pressures. Assess anxiety and intervene as necessary. Monitor telemetry for arrhythmia for 24 hours.
CONSULTS	Consideration for EP consult/Neurology consult Social work/case management for discharge planning.
DIAGNOSTICS/ LABORATORY	Echocardiogram to evaluate EF. EKG on admission and as needed for presence of presyncope symptoms/syncopal episode. Continuous telemetry for 24 hours. Consider outpatient monitoring at discharge if unremarkable Comprehensive metabolic profile, MG, CBC, troponin, lipid profile, PTT, BNP, HGA1C as appropriate.
MEDICATIONS	Obtain an accurate list of home medications. Assess hypotensive medications & diuretics No routine medications specifically ordered for Syncope.
TREATMENTS/ INTERVENTIONS	Cardiac monitor. IV access. Oxygen only if oxygen saturation <90%.
FLUIDS/NUTRITION	REGULAR; add carbohydrate controlled if diabetic Maintain hydration

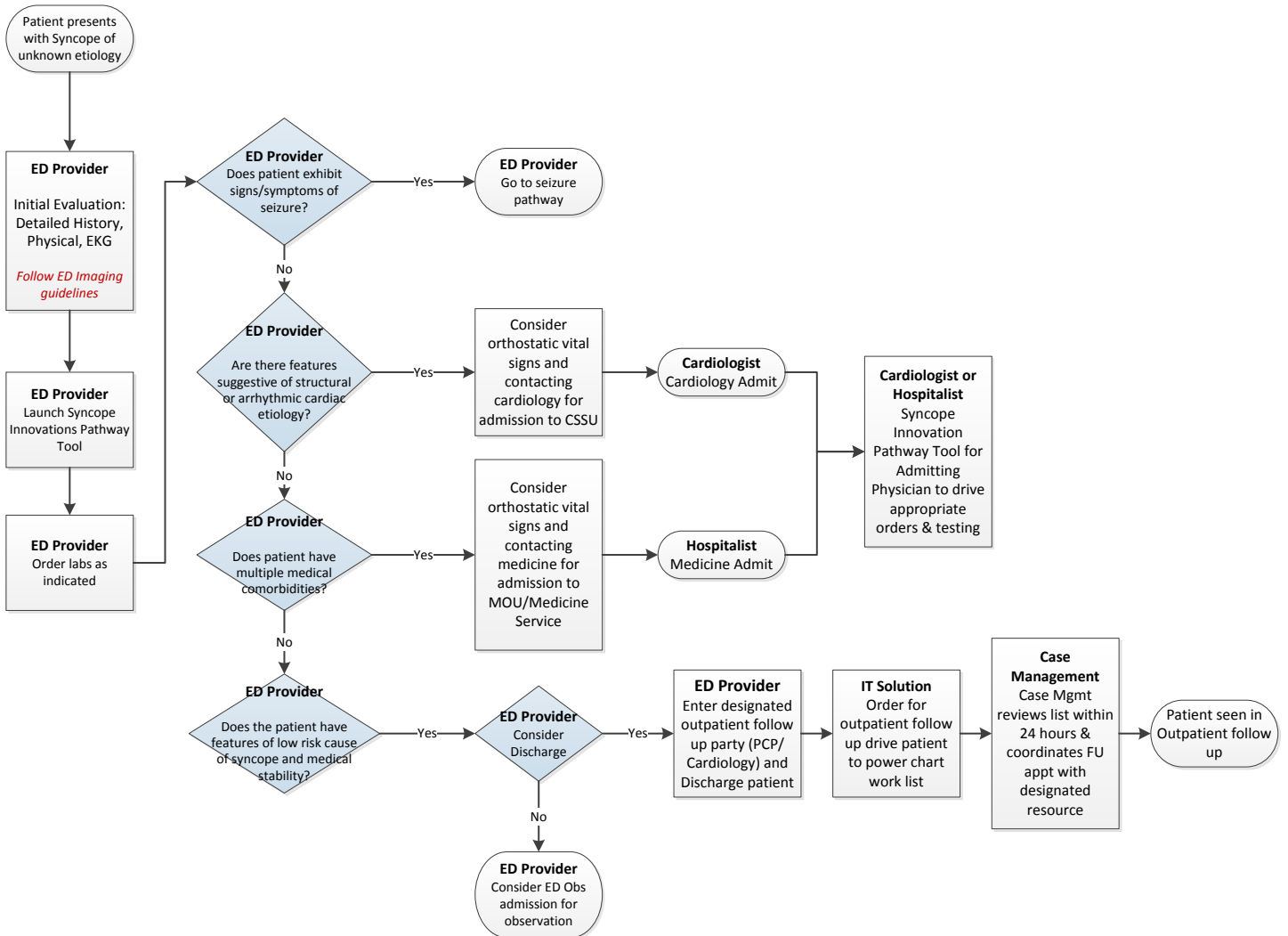


PROCESS	
<p><b>PSYCHOSOCIAL SUPPORT/ EDUCATION</b></p>	<p>Orientation to unit and procedures.                      Introduce patient to Syncope pathway and plan of care.                      Patient safety teaching (Call for symptoms associated with syncopal episodes and assistance for bed side commode, bed exit alarms)                      Teaching checklist:                      Day 1: Get Well Network: What Is Syncope – What To Expect                      CAUSES-/TYPE Exit Care                      Medication Teaching – special note to those MEDICATIONS that may need to be held/ or changed with each medication administration</p>
<p><b>DISCHARGE PLANNING</b></p>	<p>Begin discharge planning by assessing home care needs.                      Assess discharge criteria daily.                      Determine outpatient follow up plan of care.                      Assess need for further cardiac monitoring</p>





# Syncope Pathway Workflow



# PATHWAY ALGORITHMS

## ED Workflow: Syncope Pathway

To be completed on presentation of syncope patient in ED

Patient presented with syncope of unknown etiology? Y/N

### Assessment:

- Signs or symptoms of seizure?  
*(Aura consistent with Seizure, Tonic-Clonic movements > 15-30 Seconds, Tongue Biting, Prolonged post event confusion or lethargy)*
- Concerning ECG? ? (ST-Elevation, Abnormal QT waves, etc.)
- Syncope during extreme exertion or supine?
- Syncope associated with palpitations or chest pain?
- History of CHF, CAD or structural heart disease?
- Family history of sudden death?
- Significant murmur?
- Absence of prodrome?
- Multiple Medical Comorbidities?
- Typical Prodrome?
- Noxious stimulus as a precipitant?
- Positional history (supine to standing)?
- History of long period of standing?
- Trigger situation (eg, micturition)?

- Syncope Orders & Recommendations:**
- Urine Pregnancy Test (POC) *(only populate if female)*
  - UA not indwelling
  - BMP (Electro, BUN, CRT, CA, GLU)
  - CBC with differential
  - EKG with 12 lead
  - Troponin
  - $\beta$ -NP
  - ED Intends to Admit
  - Select all of the above

If Y to signs and symptoms of seizure, consider seizure pathway. (Possibly link to pathway launch in future state)

If Y to any:  
 Orthostatic vital signs  
Consider contacting cardiology and admission to CSSU

If Y:  
 Orthostatic vital signs  
Consider contacting hospitalist and admission to MOU/Medicine Service

If Y to any, is discharge possible with outpatient follow up?  
*Can we add a Yes button here and a space to key in primary care or cardiology with indicators for each?\**

**References: Diagnostic Testing for syncope**  
**Head computed tomography (CT) scanning** is not indicated in a nonfocal patient after a syncopal event. This test has a low diagnostic yield in syncope. Head CT scanning may be clinically indicated in patients with new neurologic deficits or in patients with head trauma secondary to syncope.  
**Echocardiography:** In patients with known heart disease, left ventricular function and ejection fraction have been shown to have an accurate predictive correlation with death. Echocardiography is the test of choice for evaluating suspected mechanical cardiac causes of syncope.

Note Pad with Link: <http://emedicine.medscape.com/article/811669-workup#c5>

\*\*this would feed potential case mgmt worklist to schedule follow up within 5 days



# PATHWAY ALGORITHMS

## Admit Workflow: Syncope Pathway

To be completed on admission of syncope patient

**Assessment:**

- Signs or symptoms of seizure?  
*(Aura consistent with Seizure, Tonic-Clonic movements > 15-30 Seconds, Tongue Biting, Prolonged post event confusion or lethargy)*
- Typical Prodrome?
- Noxious stimulus as a precipitant?
- Positional history (supine to standing)?
- History of long period of standing?
- Trigger situation (eg, micturition)?
- Concerning ECG?
- Syncope during extreme exertion or supine?
- Syncope associated with palpitations or chest pain?
- History of CHF, CAD or structural heart disease?
- Family history of sudden death?
- Significant murmur?
- Hematocrit < 30%?
- Age >55?
- Multiple Medical Comorbidities?

**Syncope Orders & Recommendations:**

- Urine Pregnancy Test (POC) *(only populate if female)*
- BMP (Electro, BUN, CRT, CA, GLU)
- CBC with differential
- EKG with 12 lead
- Troponin
- β-NP

*Can these populate with what has already been ordered in ED?*

*If Y to signs and symptoms of seizure, launch or recommend seizure pathway.*

*If Y to any, is discharge possible with outpatient follow up?*

*If Y to any:*

- Orthostatic vital signs
- Admit to CSSU with 24 hour telemetry *(Can we link to CSSU admission order set)*
- 2D Echo

*Consider EP consult*

*If Y to any:*

- Orthostatic vital signs
- Admit to MOU/Medicine service with 24 Hour telemetry *(Can we launch general admission or syncope order set?)*

**References: Diagnostic Testing for syncope**  
 CT, MRI/MRA, EEG and Carotid Ultrasound are considered low yield for the syncope patient population unless indicated for trauma or new neuro deficits. Orders for such tests should be deferred to a neurologist



## PATIENT EDUCATION MATERIALS

### Standardized Syncope Exit Care Document

Low risk syncope patients will have a planned outpatient follow up appointment made within 24 hours by case management.



## CLINICAL EDUCATION MATERIALS

Systemwide education on utilization of the Cerner Pathway Innovations Tool will need to take place in order to facilitate pathway implementation. Since both the Acute Medicine and Neuro Service Lines also plan to pilot the tool with their pathways, we plan to utilize a collaborative approach for education of both the Emergency Medicine and Hospitalist teams. Focused education on the tool and expectations will also be delivered to the Cardiologists and Cardiology extenders within the Heart & vascular Service Line. There will also be focused education efforts for ED Nursing, MOU, CSSU and Inpatient Nursing.



## HEALTH EQUITY CONSIDERATIONS

### Insurance and Financial assistance

Patients who are uninsured or underinsured will have the opportunity to meet with a social worker/case manager in the ER. The case manager will assist patients with identifying pharmacies that offer discounts on prescriptions and connect patients with Christiana Care's Health Guides.

Christiana Care's Health Guides can assist patients with financial assistance applications, health insurance, Medicaid and connections to community resources. After being discharged from ER, patients can call 302-320-6586 or email [healthguides@christianacare.org](mailto:healthguides@christianacare.org) to receive this assistance.

Patients who are admitted to the hospital can also receive an inpatient social work/case management consultation. The social worker or case manager will assist patients in connecting to appropriate resources.

Financial assistance information can also be found on [www.christianacare.org/financial-assistance-program](http://www.christianacare.org/financial-assistance-program) in English, Spanish, Mandarin, and Cantonese.

### Interpreter services

Patients who are non-English speakers will be provided with interpreter services for all aspects of care.

- Delaware Relay Services for the Deaf or hearing impaired. The customer service number is 1-800-676-3777 (TTY/Voice). Spanish 1- 800-676-4290 (TTY/Voz/ASCII). Sprint TTY Operator Service is 1-800-855-4000.



- Patients can be referred to AMO or Westside Health. Social workers are available at both offices for non-English speaking patients to assist with paperwork and community referrals.
- Patients living downstate can be referred to La Esperanza. This service is located in Georgetown Delaware. Their telephone number is 302-854-9262.

## Transportation

Patients with transportation issues may request assistance in getting to scheduled appointments.

- Patients with Medicaid are able to ride Logisticare for free. The number to call to schedule a pick up date and time is 1-866-412-3778. Patients must provide Medicaid ID number, date and time of appointment. Patients need to be instructed that they must call 3 full days in advance to schedule a ride, unless it is an emergency. Patients are required to be outside 15 minutes early for their scheduled pick up time.



## REFERENCES

*"Syncope: Risk Stratification and Clinical Decision Making"*

*Emergency Medicine Practice*

*www.ebmedicine.net*

*April 2014*

*"Guidelines for the Diagnosis and Management of Syncope"*

*European Heart Journal (2009) 30, 2631-2671*

*European Society of Cardiology*

*Version 2009*





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# THE CHRISTIANA CARE WAY

We serve our neighbors as respectful, expert, caring partners in their health. We do this by creating innovative, effective, affordable systems of care that our neighbors value.



**CHRISTIANA CARE**  
**HEALTH SYSTEM**

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