



The Resuscitative TEE Collaborative Registry

Overview

The Resuscitative TEE Collaborative Registry is a multi-institutional collaboration of clinicians and scientists committed to advance research in the use of TEE in acute care settings.

Formed in 2019 as an initiative of the Resuscitative TEE Project, the Resuscitative TEE Collaborative Registry brings together leaders in the fields of emergency medicine, intensive care, cardiology and anesthesiology, around the common goal to accelerate research on the use of TEE in critically-ill patients.

Over the last decade, multiple studies have demonstrated the feasibility, safety and clinical impact of transesophageal echocardiography (TEE) in different acute care settings, including the emergency department (ED) and intensive care units (ICU). In contrast with comprehensive echocardiography, focused TEE provides acute care clinicians with a goal-directed framework to guide clinical care at the point-of-care in various clinical scenarios. Common applications of TEE in critically-ill patients include assessment of circulatory failure, hemodynamic monitoring, evaluation of unexplained hypoxemia, procedural guidance and cardiac arrest resuscitation.

While many of the clinical applications of this modality have the potential to improve quality of care and clinical outcomes in critically-ill patients, to date only small, single-center observational studies have been published on the use of focused TEE in acute care environments.

Vision

The Resuscitative TEE Collaborative Registry aims to **accelerate the development of outcome-oriented research and knowledge translation** on the use of TEE in emergency and critical care settings.

Mission

The registry aims to **catalyze clinical research** involving the use of TEE in critically-ill patients through the following strategic initiatives:

- **Facilitate collaboration** between different clinical teams and organizations across the entire spectrum of users of TEE in acute care setting, including emergency departments and intensive care units.
- **Standardize data collection and reporting** that enables **multi-institutional data sharing**
- **Provide an efficient research infrastructure** that facilitates data capture, management and analysis, enabling teams around the world to conduct research studies in this field.
- **Make shared data open and accessible** to clinicians and researchers in the field with the goal to maximize the benefit of the scientific community.



Organizational structure

The Resuscitative TEE Collaborative Registry is led by a multidisciplinary team of physicians and researchers with expertise in the use of TEE in different acute care environments. The operational and research infrastructure of the Resuscitative TEE Collaborative Registry is housed by the Center for Resuscitation Science at University of Pennsylvania.

Project Manager:

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Co-Chairs

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Director of Research, Division of Emergency Ultrasound
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Medical Director of the Acute Lung Injury/VV ECMO Program
Northwell Health
Professor of Medicine
Donald and Barbara Zucker School of Medicine at Hofstra/Northwell

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Director of the Critical Care Ultrasound Program at Western University
Associate Professor of Medicine
Division of Critical Care and Division of Emergency Medicine
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Western University
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Scientific Oversight Committee (SOC)

- **Benjamin Abella MD MPhil** – Emergency Medicine / Resuscitation Science
- **Asad Usman MD** – Cardiothoracic Anesthesia
- **Katharine Burns MD** – Emergency Medicine
- **Frances Mae West MD** – Pulmonary Critical Care
- **James Horowitz MD** – Cardiology / Cardiac Critical Care
- **Kenton Anderson MD** – Emergency Medicine / Resuscitation Science



The Scientific Oversight Committee (SOC) will work in the development of the registry dataset, define areas of high priority for research in this field, coordinate registry reports, review data requests for new research proposals, and promote and disseminate scientific product from the Resuscitative TEE Collaborative Registry.

The SOC will also assist in the development of strategies to engage new participating institutions and establish procedures to ensure that research is conducted with integrity and with the highest scientific quality standards.

Instructions for participating institutions

Identify the point-of-contact person to coordinate the onboarding process as a new participating institution.

The onboarding process for new participating institutions, consists of the following steps:

1. Review and sign [Participant Agreement](#)
2. Submit IRB to your own institution. In order to participate from the registry, institutions need to have a local IRB in place to begin collecting data required for participation in the registry. The Resuscitative TEE Collaborative Registry will make available an IRB-approved protocol to use as template that can be locally adapted to facilitate this process.
3. Identify the point-of-contact person to process a Data Use Agreement (DUA) between the new participating institution and University of Pennsylvania.
4. Apply to receive a PennKey credential, required to set up an account at University of Pennsylvania's RedCap database. The Program Manager will assist you to complete this process.

EXHIBIT A

REPORTABLE DATA ELEMENTS

Clinician operator information

Level of operator performing TEE (Attending, Fellow, Resident, Other)

Specialty of operator performing TEE (EM, Intensive Care, Cardiology, Anesthesiology)

Clinical unit (ED, ICU, OR, Ward, Prehospital, Other).

Patient information

Date of birth

Gender

Race

Weight

BMI

Medical history:

Coronary artery disease (CAD), congestive heart failure (CHF), chronic kidney disease (CKD), diabetes mellitus (DM), hypertension (HTN), previous STEMI (pSTEMI), ventricular assist device (VAD), and implantable cardioverter defibrillator (ICD)

General procedure information

Procedure date / time

Procedure duration (estimated duration of total procedure in mins)

Pre-procedure interventions

Endotracheal intubation

Sedation

Muscle relaxation

Nasogastric or orogastric tube placement

Probe insertion:

Technique used

no laryngoscope used for insertion

direct laryngoscopy used for insertion

video laryngoscopy used for insertion

Number of attempts including successful insertion attempt

Immediate complications detected during probe insertion

Pharyngeal bleed

Endotracheal tube dislodgement during TEE insertion

Endotracheal tube cuff rupture during TEE insertion

Complications related to TEE



Diagnosis of esophageal perforation made after TEE
Diagnosis of oropharyngeal injury made after TEE
Diagnosis of gastrointestinal bleed made after TEE

TEE indication (will determine form for subsequent sections)

Intra-arrest evaluation in OHCA

Post-arrest evaluation in OHCA

Intra-arrest evaluation in IHCA

Post-arrest evaluation in IHCA

Initial evaluation of undifferentiated shock or acute hemodynamic decompensation

Hemodynamic monitoring in critically-ill patient

Procedural guidance

Indication-specific variables

Intra-Arrest Evaluation of Out-of-Hospital Cardiac Arrest

Prehospital process

Arrest location

Witnessed

Bystander CPR

Exact time of arrest

Approximate time of arrest

Exact downtime

Approximate downtime

First documented pulseless cardiac rhythm

Asystole

PEA

VF

VT

Unknown

EMS level

BLS

ALS

Prehospital interventions

Chest compressions

Defibrillation

Airway procedures

Valve-Mask Ventilation

Supraglottic airway device placed

Endotracheal intubation in the field

Drug administration

Epinephrine administration

Route (IV, IO)

Total number of doses given

Time of doses

Other Drug Interventions

Intravenous fluids

Antiarrhythmic Medications

Vasopressors (epinephrine infusion)

Atropine

Others

CPR quality parameters

End-Tidal CO₂ (Values / Times)



Systolic blood pressure (Values / Times)
Diastolic blood pressure (Values / Times)
CC depth
CC rate
CC fraction

ED process

Time of ED arrival

First ED documented pulseless cardiac rhythm

Asystole
PEA
VF
VT
Unknown

Emergency Department interventions

Chest compressions

Defibrillation

Airway procedures

Valve-Mask Ventilation
Supraglottic airway device placed
Endotracheal intubation

Drug administration

Epinephrine administration
Route (IV, IO)
Total number of doses given
Time of doses
Other Drug Interventions
Intravenous fluids
Antiarrhythmic Medications
Vasopressors (epinephrine infusion)
Atropine
Others

CPR quality parameters

End-Tidal CO2 (Value / Times)
Systolic blood pressure (Values / Times)
Diastolic blood pressure (Values / Times)
CC depth
CC rate
CC fraction

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Type of CPR during TEE (Manual / Mechanical)

Initial Area of Maximal Compression (AMC) in ME LAX view

Left ventricle

LVOT

Aortic root

Unable to determine

Other

End-Tidal CO₂ at the time of initial AMC assessment (Value)

DBP at the time of initial AMC assessment (Value)

AMC changed under TEE guidance (Y/N)

Time of AMC change (if previous answer yes) (Time)

End-Tidal CO₂ at the time of initial AMC assessment (Time/Value)

DBP at the time of initial AMC assessment (Time/Value)

Operator-identified TEE findings

Cardiac tamponade

RV dilation

Pseudo PEA

Hypovolemia

Fine ventricular fibrillation

Intra-cardiac thrombus

Aortic dissection

Etiology of arrest established based on TEE findings?

Outcomes

ROSC (Y/N)
Survived ED admission (Y/N)
Survived Hospital discharge (Y/N)
Date/Time of Discharge/Death
Do Not Attempt Resuscitation Order During this Admission (Date/Time)
Life Support Withdrawn
Discharge Destination
Adult Cerebral Performance Category (CPC) at Discharge
Adult Modified Rankin Score (mRS) at Discharge

Post-Arrest Evaluation of Out-of-Hospital Cardiac Arrest

Prehospital process

Arrest location

Witnessed

Bystander CPR

Exact time of arrest

Approximate time of arrest

Exact downtime

Approximate downtime

First documented pulseless cardiac rhythm

Asystole

PEA

VF

VT

Unknown

EMS level

BLS

ALS

Prehospital interventions

Chest compressions

Defibrillation

Airway procedures

Valve-Mask Ventilation

Supraglottic airway device placed

Endotracheal intubation in the field

Drug administration

Epinephrine administration



Route (IV, IO)
Total number of doses given
Time of doses
Other Drug Interventions
Intravenous fluids
Antiarrhythmic Medications
Vasopressors (epinephrine infusion)
Atropine
Others

CPR quality parameters
End-Tidal CO2 (Values / Times)
Systolic blood pressure (Values / Times)
Diastolic blood pressure (Values / Times)
CC depth
CC rate
CC fraction

ED process

First documented pulseless cardiac rhythm (during arrest)

Asystole
PEA
VF
VT
Unknown / Not available

Presenting rhythm post ROSC

Sinus tachycardia
Sinus bradycardia
Normal sinus rhythm
Atrial fibrillation
Atrial flutter
Junctional Rhythm
Ventricular tachycardia
Other
Unknown / Not available

Vital signs at time of TEE

Blood pressure
MAP
Heart rate
Pulse oximetry

Critical Care Variables

Ventilation settings at time of TEE

Ventilation mode
FiO2
RR

Tidal volume
PEEP

Drugs at the time of TEE

Sedation (Y/N)

Muscle relaxation (Y/N)

Vasopressor infusions

Epinephrine (Y/N)

Epinephrine (Dosing)

Norepinephrine (Y/N)

Norepinephrine (Dosing)

Vasopressin (Y/N)

Vasopressin (Dosing)

Dobutamine (Y/N)

Dobutamine (Dosing)

Other (Specify)

Targeted Temperature Management initiated at the time of TEE (Y/N)

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Operator-identified TEE findings

Cardiac tamponade

Echocardiographic signs suggesting acute right ventricular failure

Echocardiographic signs suggesting pulmonary embolism

Intra-cardiac LV thrombus

Intra-cardiac RV thrombus

Global LV systolic dysfunction

Echocardiographic signs suggesting hypovolemia

Aortic dissection

None

Type A

Type B

Wall motion abnormalities

None

LAD (Anterior, Septal)

RCA (Inferior)

Circumflex (Lateral)

LV rupture

SVC diameter respirophasic variation (%)

Acute severe valvular pathology

Etiology of arrest established based on TEE findings?

Change in management based on TEE findings

No change in management based on TEE findings

Patient was taken to the cardiac catheterization lab

Patient was taken to the operating room

Decision to give intravenous fluids

Decision to stop intravenous fluids administration

Patient was started on vasopressors for hemodynamic support

Decision to initiate mechanical circulatory support

Other intervention

Change in management based on TEE findings

No change in management based on TEE findings

Patient was taken to the cardiac catheterization lab

Pericardiocentesis was performed

Decision to give intravenous fluids

Decision to stop intravenous fluids administration

Patient was started on vasopressors for hemodynamic support

Decision to initiate mechanical circulatory support

Outcomes

Survived ICU admission (Y/N)

Survived Hospital discharge (Y/N)

Date/Time of Discharge/Death

Do Not Attempt Resuscitation Order During this Admission (Date/Time)

Life Support Withdrawn

Discharge Destination

Adult Cerebral Performance Category (CPC) at Discharge

Adult Modified Rankin Score (mRS) at Discharge

Intra-Arrest Evaluation of In-Hospital-Cardiac Arrest

In-Hospital Arrest Process

Arrest location (Emergency Department, Hospital Ward, Intensive Care Unit, Operating Room, Other)

Witnessed

Bystander CPR

Exact time of arrest

Approximate time of arrest

First documented pulseless cardiac rhythm

Asystole

PEA

VF

VT

Unknown

In-hospital arrest interventions

Chest compressions

Defibrillation

Airway procedures

Valve-Mask Ventilation

Supraglottic airway device placed

Endotracheal intubation in the field

Drug administration

Epinephrine administration

Route (IV, IO)

Total number of doses given

Time of doses

Other Drug Interventions

Intravenous fluids

Antiarrhythmic Medications

Vasopressors (epinephrine infusion)

Atropine

Others

CPR quality parameters

End-Tidal CO₂ (Values / Times)

Systolic blood pressure (Values / Times)

Diastolic blood pressure (Values / Times)

CC depth

CC rate

CC fraction

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Type of CPR during TEE (Manual / Mechanical)

Initial Area of Maximal Compression (AMC) in ME LAX view

Left ventricle

LVOT

Aortic root

Unable to determine

Other

End-Tidal CO₂ at the time of initial AMC assessment (Value)

DBP at the time of initial AMC assessment (Value)

AMC changed under TEE guidance (Y/N)

Time of AMC change (if previous answer yes) (Time)

End-Tidal CO₂ at the time of initial AMC assessment (Time/Value)

DBP at the time of initial AMC assessment (Time/Value)

Operator-identified TEE findings

Cardiac tamponade

RV dilation

Pseudo PEA

Hypovolemia

Fine ventricular fibrillation

Intra-cardiac thrombus

Aortic dissection

Etiology of arrest established based on TEE findings

Outcomes

ROSC (Y/N)

Survived Hospital discharge (Y/N)

Date/Time of Discharge/Death

Do Not Attempt Resuscitation Order During this Admission (Date/Time)

Life Support Withdrawn

Discharge Destination
Adult Cerebral Performance Category (CPC) at Discharge
Adult Modified Rankin Score (mRS) at Discharge

Post-Arrest Evaluation of In-Hospital Cardiac Arrest

First documented pulseless cardiac rhythm (during arrest)

- Asystole
- PEA
- VF
- VT
- Unknown / Not available

Hospital interventions

- Chest compressions
- Defibrillation
- Airway procedures
 - Valve-Mask Ventilation
 - Supraglottic airway device placed
 - Endotracheal intubation

Drug administration

- Epinephrine administration
 - Route (IV, IO)
 - Total number of doses given
 - Time of doses
- Other Drug Interventions
 - Intravenous fluids
 - Antiarrhythmic Medications
 - Vasopressors (epinephrine infusion)
 - Atropine
 - Others

Presenting rhythm post ROSC

- Sinus tachycardia
- Sinus bradycardia
- Normal sinus rhythm
- Atrial fibrillation
- Atrial flutter
- Junctional Rhythm
- Ventricular tachycardia
- Other
- Unknown / Not available

Vital signs at time of TEE

- Blood pressure
- MAP
- Heart rate
- Pulse oximetry

Critical Care Variables



Ventilation settings at time of TEE

Ventilation mode
FiO2
RR
Tidal volume
PEEP

Drugs at the time of TEE

Sedation (Y/N)
Muscle relaxation (Y/N)
Vasopressor infusions
 Epinephrine (Y/N)
 Epinephrine (Dosing)
 Norepinephrine (Y/N)
 Norepinephrine (Dosing)
 Vasopressin (Y/N)
 Vasopressin (Dosing)
 Dobutamine (Y/N)
 Dobutamine (Dosing)
 Other (Specify)

Targeted Temperature Management initiated at the time of TEE (Y/N)

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Operator-identified TEE findings

Cardiac tamponade
Echocardiographic signs suggesting acute right ventricular failure
Echocardiographic signs suggesting pulmonary embolism
Intra-cardiac LV thrombus
Intra-cardiac RV thrombus
Global LV systolic dysfunction



Echocardiographic signs suggesting hypovolemia

Aortic dissection

- None
- Type A
- Type B

Wall motion abnormalities

- None
- LAD (Anterior, Septal)
- RCA (Inferior)
- Circumflex (Lateral)

LV rupture

SVC diameter respirophasic variation (%)

Acute severe valvular pathology

- Valvular assessment not performed
- No evidence of severe pathology
- Aortic regurgitation
- Mitral insufficiency
- Tricuspid regurgitation

Etiology of arrest established based on TEE findings?

Change in management based on TEE findings

- No change in management based on TEE findings
- Patient was taken to the cardiac catheterization lab
- Patient was taken to the operating room
- Pericardiocentesis was performed
- Decision to give intravenous fluids
- Decision to stop intravenous fluids administration
- Patient was started on vasopressors for hemodynamic support
- Decision to initiate mechanical circulatory support
- Other intervention

Outcomes

Survived ICU admission (Y/N)

Survived Hospital discharge (Y/N)

Date/Time of Discharge/Death

Do Not Attempt Resuscitation Order During this Admission (Date/Time)

Life Support Withdrawn

Discharge Destination

Adult Cerebral Performance Category (CPC) at Discharge

Adult Modified Rankin Score (mRS) at Discharge

Initial evaluation of undifferentiated shock or acute hemodynamic decompensation

Cardiac rhythm at the time of TEE

- Sinus tachycardia
- Sinus bradycardia
- Normal sinus rhythm
- Atrial fibrillation
- Atrial flutter
- Junctional Rhythm
- Ventricular tachycardia
- Other
- Unknown / Not available

Vital signs at time of TEE

- Blood pressure
- MAP
- Heart rate
- Pulse oximetry

Critical Care Variables

Ventilation settings at time of TEE

- Ventilation mode
- FiO₂
- RR
- Tidal volume
- PEEP

Drugs at the time of TEE

- Sedation (Y/N)
- Muscle relaxation (Y/N)
- Vasopressor infusions
 - Epinephrine (Y/N)
 - Epinephrine (Dosing)
 - Norepinephrine (Y/N)
 - Norepinephrine (Dosing)
 - Vasopressin (Y/N)
 - Vasopressin (Dosing)
 - Dobutamine (Y/N)
 - Dobutamine (Dosing)
 - Other (Specify)

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Operator-identified TEE findings

Pericardium:

- Pericardial effusion present (Y/N)
- Echocardiographic signs of tamponade (Y/N)
- Not evaluated

Left ventricle:

- Presence of global LV systolic dysfunction (Y/N)
- Estimated EF (%)
- Not evaluated

Cardiac output:

- LVOT diameter (CM)
- LVOT VTI (CM)
- HR
- Not evaluated
- Unable to determine

Right ventricle:

- Presence of RV dysfunction (Y/N)
- TAPSE (mm)
- FAC (%)
- Not evaluated
- Unable to determine

SVC:

- Size end of diastole (mm)
- Respirophasic variation
- < 36% diameter variation
- > 36% diameter variation
- Not evaluated
- Unable to determine

Transesophageal Lung Ultrasound (TELUS):



- A-line pattern bilaterally
- B-Line pattern bilaterally
- Right pleural effusion present
- Left pleural effusion present
- Not evaluated

Operator's impression:

- Echocardiographic signs suggesting acute right ventricular failure
- Echocardiographic signs suggesting pulmonary embolism
- Intra-cardiac LV thrombus
- Intra-cardiac RV thrombus
- Global LV systolic dysfunction
- Echocardiographic signs suggesting hypovolemia
- Aortic dissection
 - None
 - Type A
 - Type B
- Wall motion abnormalities
 - None
 - LAD (Anterior, Septal)
 - RCA (Inferior)
 - Circumflex (Lateral)
- LV rupture
- Acute severe valvular pathology
 - Valvular assessment not performed
 - No evidence of severe pathology
 - Aortic regurgitation
 - Mitral insufficiency
 - Tricuspid regurgitation

Etiology of shock / hemodynamic decompensation established based on TEE findings?

Change in management based on TEE findings

- No change in management based on TEE findings
- Patient was taken to the cardiac catheterization lab
- Patient was taken to the operating room
- Pericardiocentesis was performed
- Decision to give intravenous fluids
- Decision to stop intravenous fluids administration
- Patient was started on vasopressors for hemodynamic support
- Decision to initiate mechanical circulatory support
- Other intervention (Describe)

Hemodynamic monitoring in critically-ill patient

Cardiac rhythm at the time of TEE

- Sinus tachycardia
- Sinus bradycardia
- Normal sinus rhythm
- Atrial fibrillation
- Atrial flutter
- Junctional Rhythm
- Ventricular tachycardia
- Other
- Unknown / Not available

Vital signs at time of TEE

- Blood pressure
- MAP
- Heart rate
- Pulse oximetry

Critical Care Variables

Ventilation settings at time of TEE

- Ventilation mode
- FiO₂
- RR
- Tidal volume
- PEEP

Drugs at the time of TEE

- Sedation (Y/N)
- Muscle relaxation (Y/N)
- Vasopressor infusions
 - Epinephrine (Y/N)
 - Epinephrine (Dosing)
 - Norepinephrine (Y/N)
 - Norepinephrine (Dosing)
 - Vasopressin (Y/N)
 - Vasopressin (Dosing)
 - Dobutamine (Y/N)
 - Dobutamine (Dosing)
 - Other (Specify)

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Operator-identified TEE findings

Pericardium:

- Pericardial effusion present (Y/N)
- Echocardiographic signs of tamponade (Y/N)
- Not evaluated

Left ventricle:

- Presence of global LV systolic dysfunction (Y/N)
- Estimated EF (%)
- Not evaluated

Cardiac output:

- LVOT diameter (CM)
- LVOT VTI (CM)
- HR
- Not evaluated
- Unable to determine

Right ventricle:

- Presence of RV dysfunction (Y/N)
- TAPSE (mm)
- FAC (%)
- Not evaluated
- Unable to determine

SVC:

- Size end of diastole (mm)
- Respirophasic variation
- < 36% diameter variation
- > 36% diameter variation
- Not evaluated
- Unable to determine

Transesophageal Lung Ultrasound (TELUS):

- A-line pattern bilaterally
- B-Line pattern bilaterally
- Right pleural effusion present
- Left pleural effusion present
- Not evaluated

Operator's impression:

- Echocardiographic signs suggesting acute right ventricular failure
- Echocardiographic signs suggesting pulmonary embolism
- Intra-cardiac LV thrombus
- Intra-cardiac RV thrombus
- Global LV systolic dysfunction
- Echocardiographic signs suggesting hypovolemia
- Aortic dissection
 - None
 - Type A
 - Type B
- Wall motion abnormalities
 - None
 - LAD (Anterior, Septal)
 - RCA (Inferior)
 - Circumflex (Lateral)
- LV rupture
- Acute severe valvular pathology
 - Valvular assessment not performed
 - No evidence of severe pathology
 - Aortic regurgitation
 - Mitral insufficiency
 - Tricuspid regurgitation

Etiology of shock / hemodynamic decompensation established based on TEE findings?

Change in management based on TEE findings

- No change in management based on TEE findings
- Patient was taken to the cardiac catheterization lab
- Patient was taken to the operating room
- Pericardiocentesis was performed
- Decision to give intravenous fluids
- Decision to stop intravenous fluids administration
- Patient was started on vasopressors for hemodynamic support
- Decision to initiate mechanical circulatory support
- Other intervention (Describe)

Procedural guidance

Procedure guided with TEE

Intravenous pacemaker
Veno-arterial (VA) ECMO
Veno-venous (VV) ECMO
Impella pump placement
Intra-aortic balloon pump (IABP) pump placement

TEE data

Windows obtained

- Mid-esophageal four chamber view
- Mid-esophageal long axis view (three chamber view)
- Mid-esophageal bicaval view
- Transgastric midpapillary muscle short axis view
- Mid-esophageal two chamber view
- Mid-esophageal aortic valve short axis view
- Upper esophageal ascending aorta view short axis (main PA view)
- Upper esophageal ascending aorta view long axis
- Mid-esophageal right ventricular inflow-outflow view
- Mid-esophageal descending aorta short axis view
- Mid-esophageal descending aorta long axis view
- Transgastric midpapillary muscle long axis view
- Transgastric deep five chamber view
- Other (Describe)

Notes from procedure (free text)

Briefly describe how TEE was used to guide procedure