2014 NSTE-ACS Guidelines Overview

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Acute Coronary Syndrome Summit

October 25, 2016

At the end of this presentation the learner will be able to:

- Locate resources on ACS, Troponin, Risk Assessment, and online Guideline Transformation Optimization consumables

- Understand the ACS continuum of care

- Verbalize how the semantic differences between UA/NSTEMI/STEMI fit into an ACS System of Care program

- Review Mission: Lifeline NSTEMI measures' supporting science and data specs

Are you:

- Full time abstractor
- Chest Pain Program coordinator/manager
  - With abstractor duties
  - Without abstractor duties
- Multiple titles such as manager, STEMI and Stroke Coordinator etc.
- Staff nurse with program coordination duties
- Staff nurse with data abstraction duties
- All of the above

MISSION: LIFELINE®

Online Resource to Help Your Program's Uptake of NSTEMI Guidelines

The Guideline Transformation & Optimization Initiative

Webinar

AHA/ACC Guideline

2014 AHA/ACC Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes

A Report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines

Developed in Collaboration With the Society for Cardiovascular Angiography
and Interventions and Society of Thoracic Surgeons

Endorsed by the American Association for Clinical Chemistry

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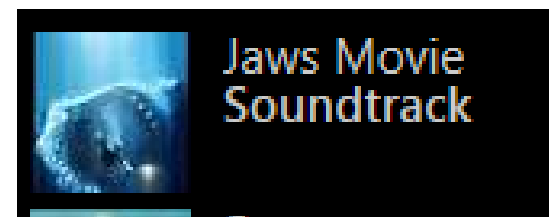Richard W. Smalling, MD, PhD, FACC, FSCAI***; Susan J. Zieman, MD, PhD, FACC†

Understanding Terminology and Semantic Influence

Human Brain thinks in pictures while subconsciously looking for patterns
Consider the _Semantics_ of every interaction

SHARK

Acute Coronary Syndrome (ACS)

"ACS has evolved as a useful <u>operational term</u> that refers to a <u>spectrum</u> of conditions compatible with <u>acute</u> myocardial ischemia <u>and/or</u> infarction that are <u>usually</u> due to an abrupt reduction in coronary blood flow."
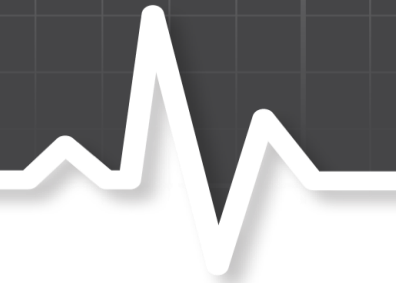
ACS also refers to patients with

Symptoms which occur due to a partial or total blockage of a coronary artery causing myocardial

- ischemia (cells starving of oxygen) OR
- infarction (cell death).

The acronym 'MI' represents any myocardial infarction; whereas

'AMI' refers to Acute Myocardial Infarction

Amsterdam, E. A. et al. (2014). 2014 AHA/ACC Guideline for the management of patients with non-ST-elevation acute coronary syndromes: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. *Circulation*, e344-426. Retrieved from http://circ.ahajournals.org/content/130/25/e344.full.pdf+html. doi: 10.1161/circ.0000000000000134.

Semantics will get you Every Time

"A key branch point is ST-segment elevation (ST-elevation) <u>or</u> new left bundle-branch block on the ECG which is an <u>indication</u> for immediate coronary angiography to determine <u>if</u> there is an indication for reperfusion therapy to open a <u>likely</u> completely occluded coronary artery."

"The absence of persistent ST-elevation is <u>suggestive</u> of NSTE-ACS <u>except</u> in patient with true posterior MI."
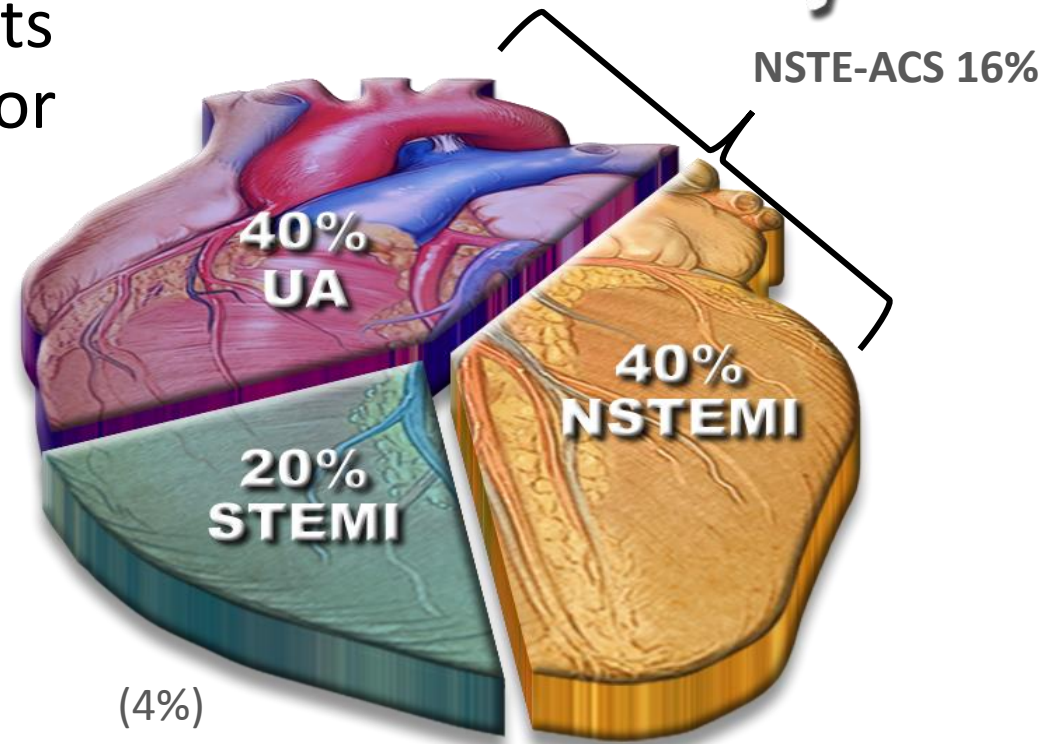
Presentation → Working Dx → ECG → Cardiac Biomarker → Final Dx

Ischemic Discomfort

ACS

No ST Elevation ← → ST Elevation

NSTE-ACS

UA — NSTEMI* — STEMI*

Unstable Angina — Myocardial Infarction — Noncardiac Etiologies
NQMI — QwMI

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Variance in Symptoms
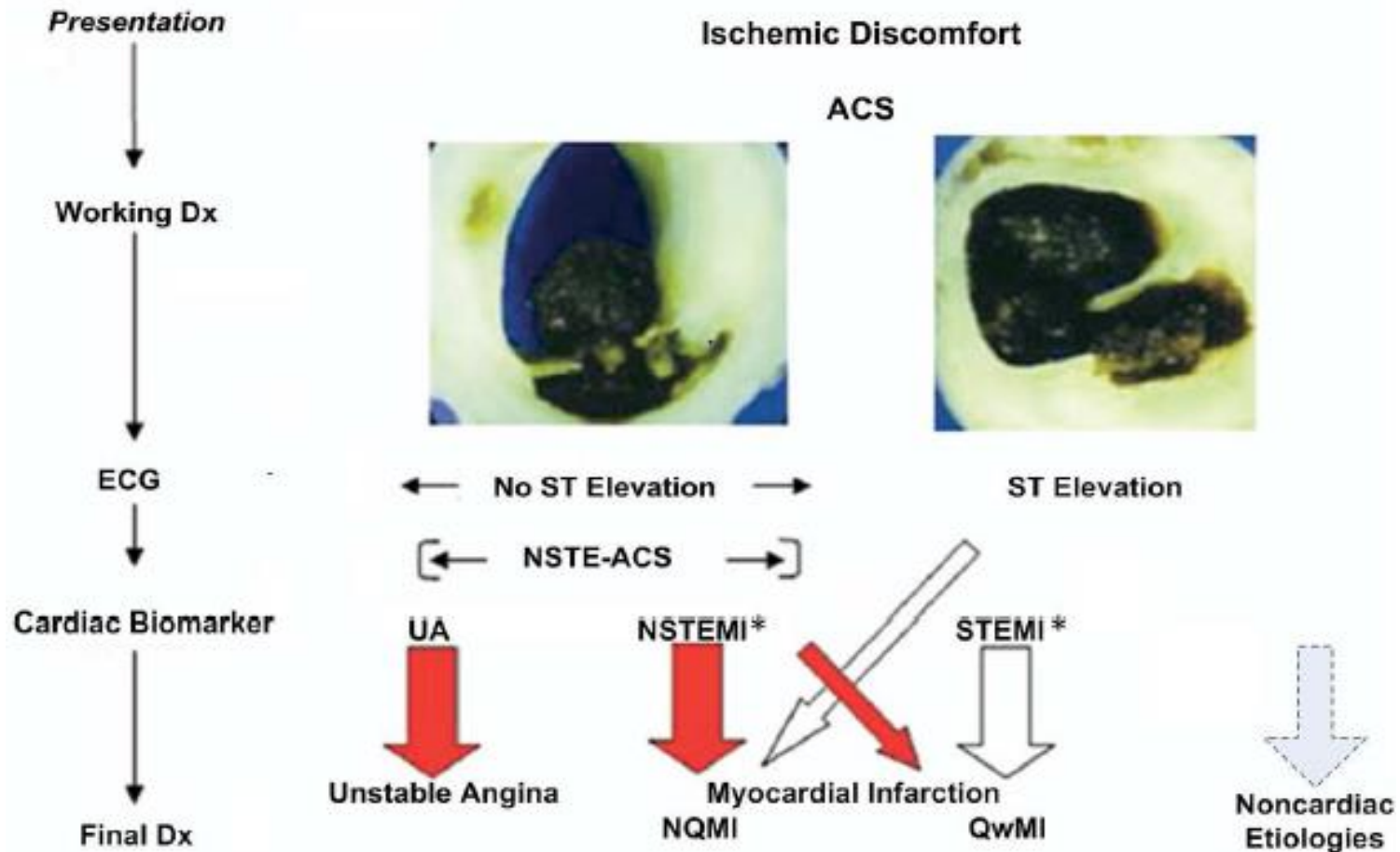
Symptoms are Confusing

- Abdominal or Chest Pain, Pressure
- Any Discomfort above the Navel
- Jaw Pain
- Tooth Ache
- Unexplained Arm Pain
- Alterations in Mental status, confusion, dizziness
- Palpitations
- Profuse sweating
- Indigestion
- Shortness of breath
- Unexplained excessive fatigue
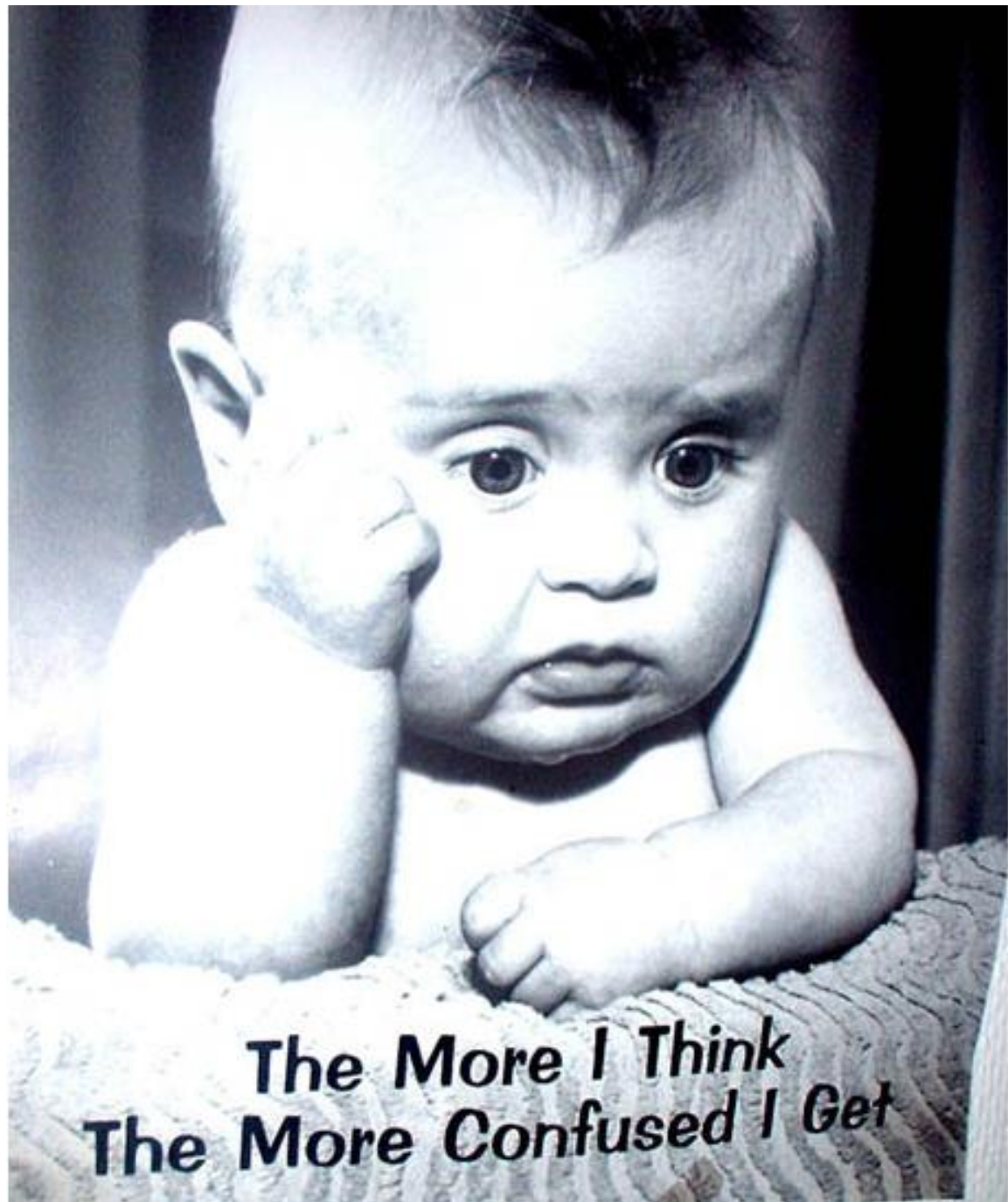
The More I Think
The More Confused I Get

Front End of Care

Reviewing Guidelines: Level of Evidence (LOE) And Class Matrix

Table 1. Applying Classification of Recommendations and Level of Evidence

SIZE OF TREATMENT EFFECT →

ESTIMATE OF CERTAINTY (PRECISION) OF TREATMENT EFFECT ↓

	CLASS I Benefit >>> Risk Procedure/Treatment SHOULD be performed/administered	CLASS IIa Benefit >> Risk Additional studies with focused objectives needed IT IS REASONABLE to perform procedure/administer treatment	CLASS IIb Benefit ≥ Risk Additional studies with broad objectives needed; additional registry data would be helpful Procedure/Treatment MAY BE CONSIDERED	CLASS III No Benefit or CLASS III Harm
LEVEL A Multiple populations evaluated* Data derived from multiple randomized clinical trials or meta-analyses	■ Recommendation that procedure or treatment is useful/effective ■ Sufficient evidence from multiple randomized trials or meta-analyses	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from multiple randomized trials or meta-analyses	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Sufficient evidence from multiple randomized trials or meta-analyses
LEVEL B Limited populations evaluated* Data derived from a single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is useful/effective ■ Evidence from single randomized trial or nonrandomized studies	■ Recommendation in favor of treatment or procedure being useful/effective ■ Some conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation's usefulness/efficacy less well established ■ Greater conflicting evidence from single randomized trial or nonrandomized studies	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Evidence from single randomized trial or nonrandomized studies
LEVEL C Very limited populations evaluated* Only consensus opinion of experts, case studies, or standard of care	■ Recommendation that procedure or treatment is useful/effective ■ Only expert opinion, case studies, or standard of care	■ Recommendation in favor of treatment or procedure being useful/effective ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation's usefulness/efficacy less well established ■ Only diverging expert opinion, case studies, or standard of care	■ Recommendation that procedure or treatment is not useful/effective and may be harmful ■ Only expert opinion, case studies, or standard of care

For CLASS III:

	Procedure/Test	Treatment
COR III: No benefit	Not Helpful	No Proven Benefit
COR III: Harm	Excess Cost w/o Benefit or Harmful	Harmful to Patients

Amsterdam, E. A. et al. (2014). 2014 AHA/ACC Guideline for the management of patients with non-ST-elevation acute coronary syndromes: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. *Circulation*, e344-426. Retrieved from http://circ.ahajournals.org/content/130/25/e344.full.pdf+html. doi: 10.1161/circ.0000000000000134.

An Evaluation Process must guide the Patient's Pathway through the System of Care

Key is to help all segments of the System of Care decrease <u>variance</u> in their <u>collective</u> processes

3.2. Diagnosis of NSTE-ACS

3.2.1 History

3.2.2 Physical Exam

3.2.3 Electrocardiogram

3.2.4 Biomarkers of Myocardial Necrosis

3.2.5 Imaging

Defining Acute Coronary Syndrome

The spectrum of ACS includes
UA – NSTEMI - STEMI

Patient Presents with Symptoms
Consistent with ACS

??STEMI +
12-Lead ECG

NO

YES

Refer to
Non-ST Elevation Acute Coronary Syndrome
Continuum

Refer to
STEMI Processes

TROPONIN
Appropriately + for
NSTEMI

NO

YES

LOW RISK to Unstable Angina Continuum

NSTEMI Processes

Ischemia Guided Treatment Strategy Treatment

Amsterdam, E. A. et al. (2014). 2014 AHA/ACC Guideline for the management of patients with non-ST-elevation acute coronary syndromes: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. *Circulation*, e344-426. Retrieved from
http://circ.ahajournals.org/content/130/25/e344.full.pdf+html. doi: 10.1161/circ.0000000000000134.

3.1. Clinical Assessment and Initial Evaluation: Recommendation

Class I, LOE: B

Patients with suspected ACS should be risk stratified based on the likelihood of ACS and adverse outcome(s) to decide on the need for hospitalization and assist in the selection of treatment options.

Risk Stratification
Conservative vs. Ischemia Guided Strategy
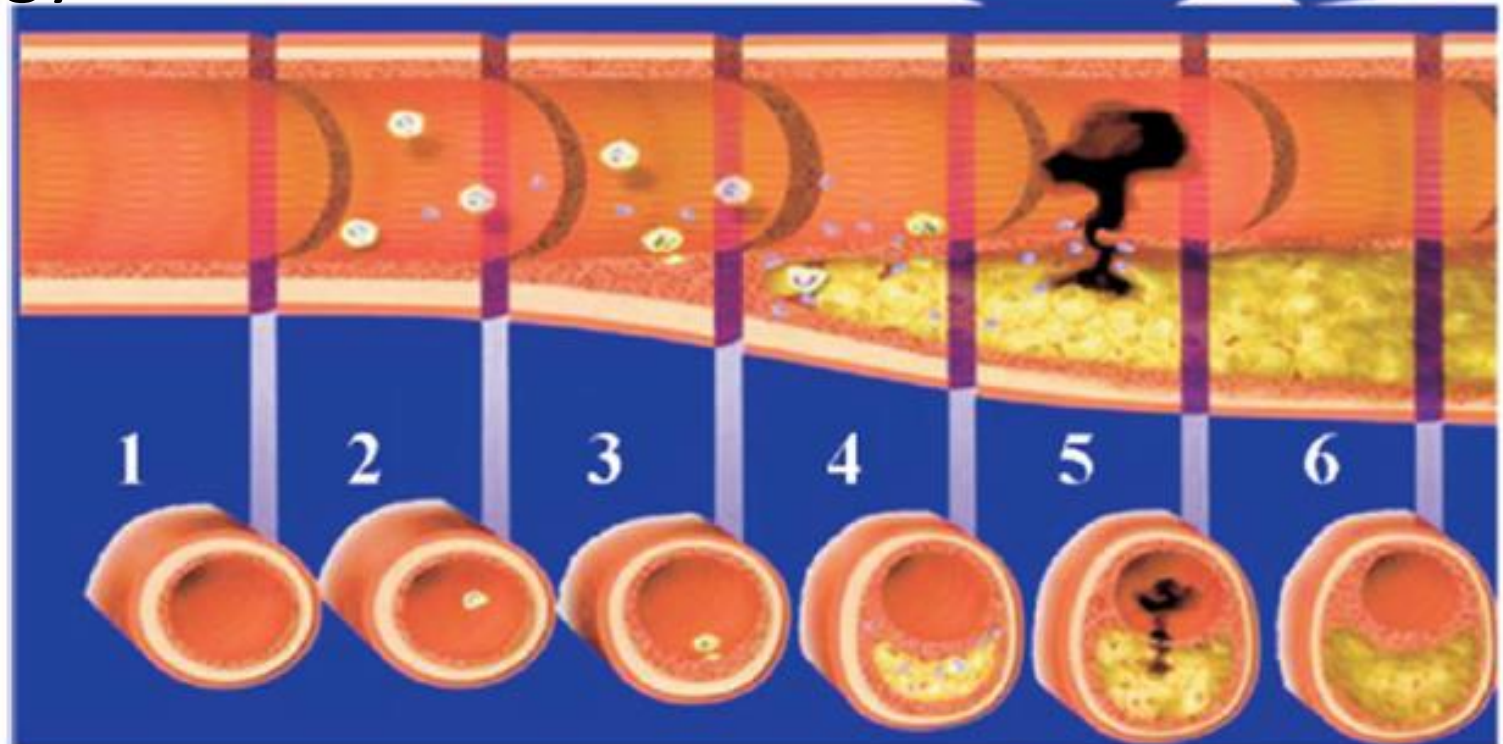
Onset of NSTE-ACS
- Initial recognition and management in the ED by first responders or ED personnel
- Risk stratification
- Immediate management

Hospital Management
- Medication
- Conservative versus ischemia-guided strategy
- Special groups
- Preparation for discharge

Management Prior to NSTE-ACS
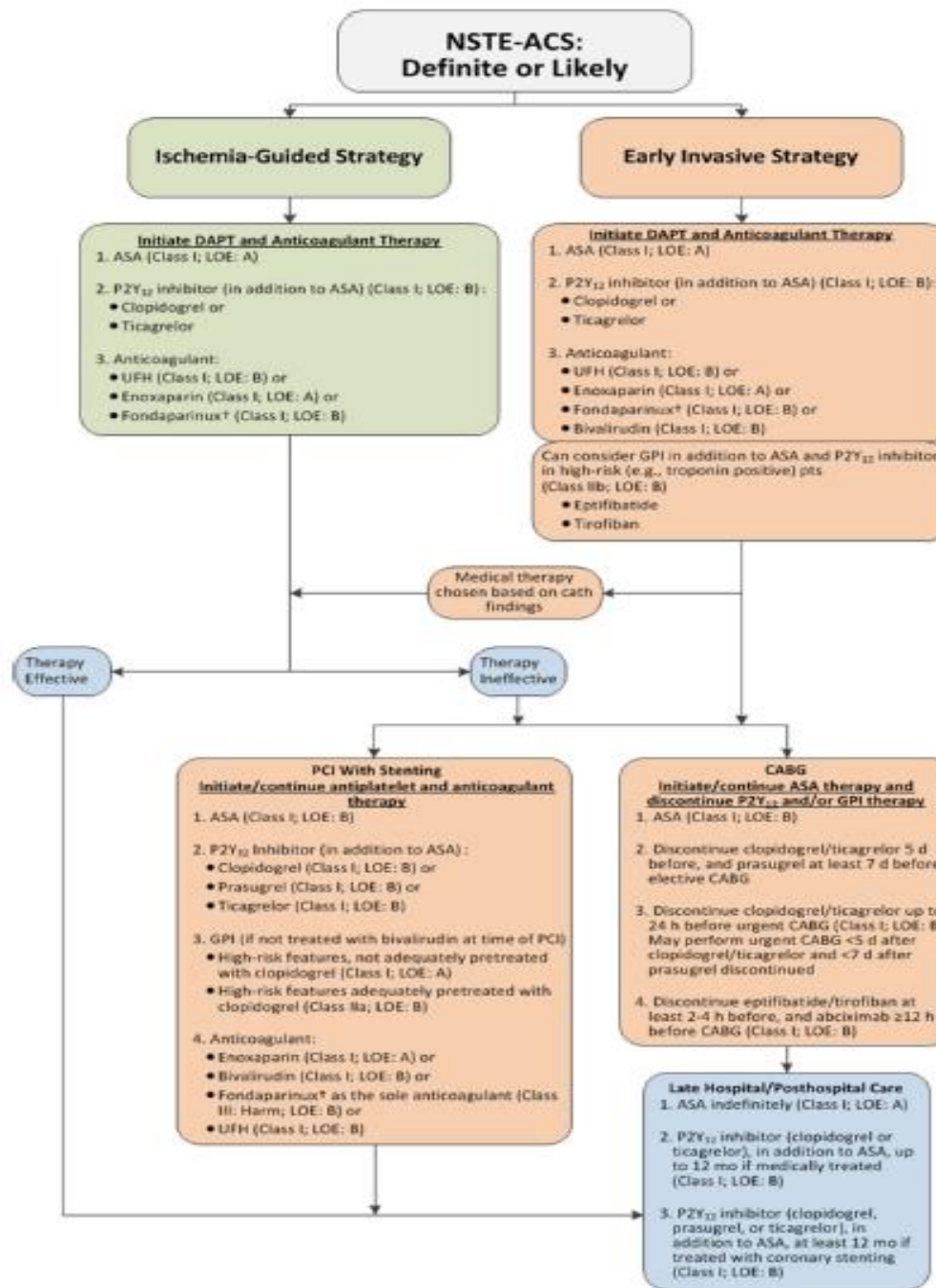
Secondary Prevention/ Long-Term Management

1 2 3 4 5 6

Amsterdam, E. A. et al. (2014). 2014 AHA/ACC Guideline for the management of patients with non-ST-elevation acute coronary syndromes: A report of the American College of Cardiology/American Heart Association Task Force on practice guidelines. *Circulation*, e344-426. Retrieved from http://circ.ahajournals.org/content/130/25/e344.full.pdf+html. doi: 10.1161/circ.0000000000000134.

MISSION: LIFELINE®

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3.2. Diagnosis of NSTE-ACS

Class I

1. *12-Lead:* Symptoms suggestive of ACS should receive and have interpreted within 10 minutes (LOE C)

3. Cardiac-specific troponin level should be measured at presentation and 3-6 hours after symptom onset in all patients who present with symptoms consistent with ACS to identify a rising and/or falling pattern (LOE A)

5. Risk scores should be used to assess prognosis in patients with NSTE-AC (LOE A)
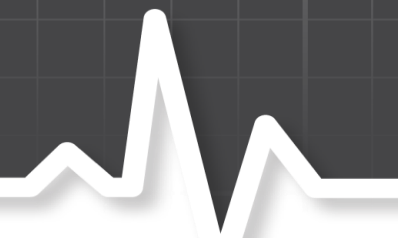
Table 4. Summary of Recommendations for Prognosis: Early Risk Stratification

Recommendations	COR	LOE	References
Perform rapid determination of likelihood of ACS, including a 12-lead ECG within 10 min of arrival at an emergency facility, in patients whose symptoms suggest ACS	I	C	21
Perform serial ECGs at 15- to 30-min intervals during the first hour in symptomatic patients with initial nondiagnostic ECG	I	C	N/A
Measure cardiac troponin (cTnI or cTnT) in all patients with symptoms consistent with ACS*	I	A	21, 64, 67–71
Measure serial cardiac troponin I or T at presentation and 3–6 h after symptom onset* in all patients with symptoms consistent with ACS	I	A	21, 72–74
Use risk scores to assess prognosis in patients with NSTE-ACS	I	A	42–44, 75–80
Risk-stratification models can be useful in management	IIa	B	42–44, 75–81
Obtain supplemental electrocardiographic leads V_7 to V_9 in patients with initial nondiagnostic ECG at intermediate/high risk for ACS	IIa	B	82–84
Continuous monitoring with 12-lead ECG may be a reasonable alternative with initial nondiagnostic ECG in patients at intermediate/high risk for ACS	IIb	B	85, 86
BNP or NT–pro-BNP may be considered to assess risk in patients with suspected ACS	IIb	B	87–91

3.4 Cardiac Biomarkers and the Universal Definition of MI

Class I

1. Cardiac-specific troponin level should be measured at presentation and 3-6 hours after symptom onset in all patients who present with symptoms consistent with ACS to identify a rising and/or falling pattern (LOE A)

Class III: No Benefit

With contemporary troponin assays, CK-MB and myoglobin are not useful for diagnosis of ACS (LOE A)

Third Universal Definition of Myocardial Infarction

- Any myocardial necrosis in the setting of myocardial ischemia

- Diagnosis of MI requires a rise and/or fall in the troponin value with at least one value above the decision level or cut point.
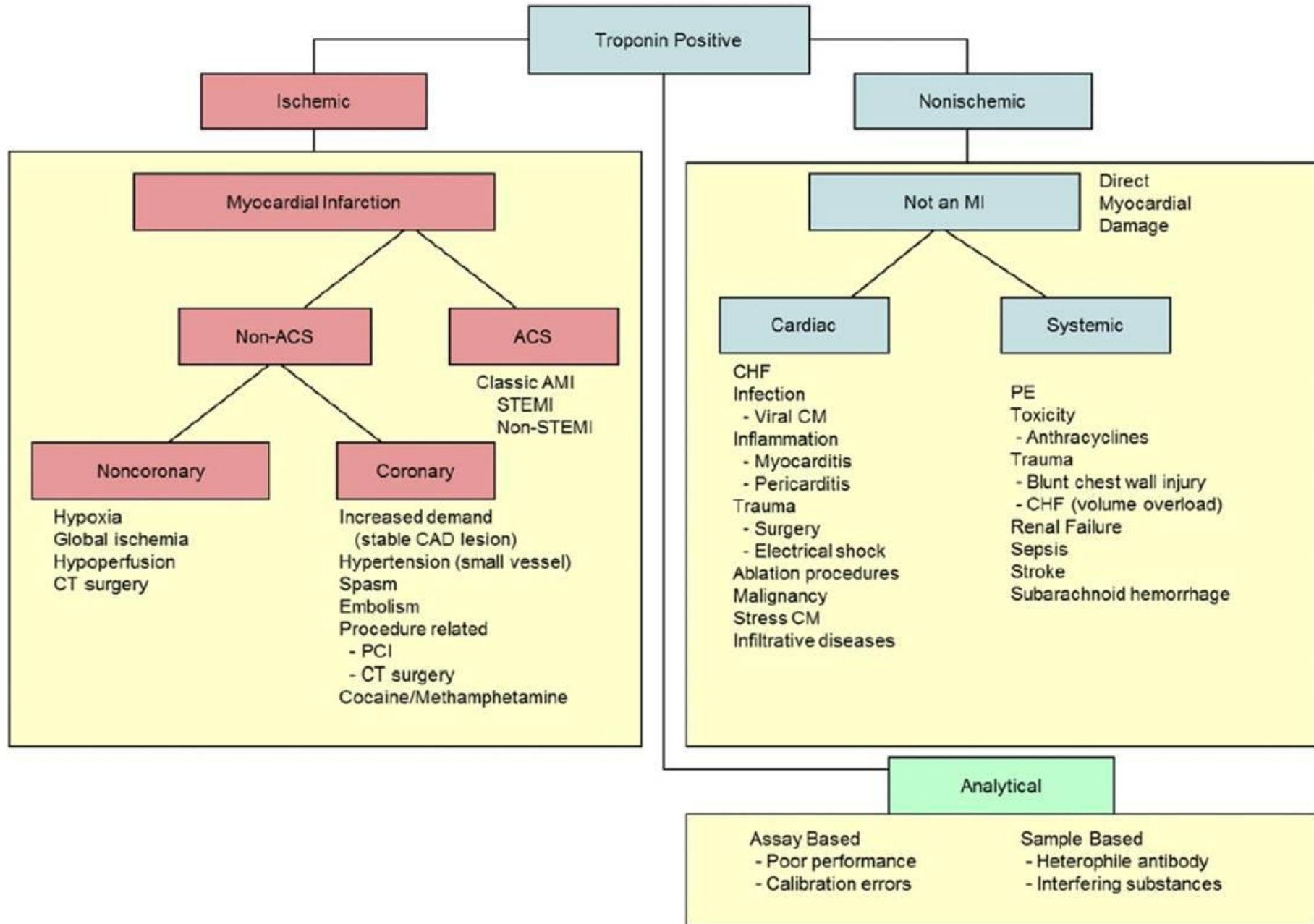
Thygesen, K., Alpert, J. S., Jaffe, A. S., Simoons, M. L., Chaitman, B. R., White, H. D., . . . Mendis, S. (2012). Third universal definition of myocardial infarction. *Circulation*, 126(16), 2020-2035. doi: 10.1161/CIR.0b013e31826e1058

EXPERT CONSENSUS DOCUMENT

ACCF 2012 Expert Consensus Document on Practical Clinical Considerations in the Interpretation of Troponin Elevations

A Report of the American College of Cardiology Foundation Task Force on
Clinical Expert Consensus Documents

*Developed in Collaboration With the American Association for Clinical Chemistry,
American College of Chest Physicians, American College of Emergency Physicians, American Heart Association,
and Society for Cardiovascular Angiography and Interventions*

Newby, L. K., Jesse, R. L., Babb, J. D., Christenson, R. H., De Fer, T. M., Diamond, G. A., . . . Weintraub, W. S. (2012). ACCF 2012 expert consensus document on practical clinical considerations in the interpretation of troponin elevations: a report of the American College of Cardiology Foundation task force on Clinical Expert Consensus Documents. *Journal of The American College of Cardiology, 60*(23), 2427-2463. doi: 10.1016/j.jacc.2012.08.969

Troponin Positive

Ischemic

Myocardial Infarction

- Non-ACS
  - Noncoronary
    - Hypoxia
    - Global ischemia
    - Hypoperfusion
    - CT surgery
  - Coronary
    - Increased demand (stable CAD lesion)
    - Hypertension (small vessel)
    - Spasm
    - Embolism
    - Procedure related
      - PCI
      - CT surgery
    - Cocaine/Methamphetamine
- ACS
  - Classic AMI
  - STEMI
  - Non-STEMI

Nonischemic

Not an MI — Direct Myocardial Damage

- Cardiac
  - CHF
  - Infection
    - Viral CM
  - Inflammation
    - Myocarditis
    - Pericarditis
  - Trauma
    - Surgery
    - Electrical shock
  - Ablation procedures
  - Malignancy
  - Stress CM
  - Infiltrative diseases
- Systemic
  - PE
  - Toxicity
    - Anthracyclines
  - Trauma
    - Blunt chest wall injury
    - CHF (volume overload)
  - Renal Failure
  - Sepsis
  - Stroke
  - Subarachnoid hemorrhage

Analytical

- Assay Based
  - Poor performance
  - Calibration errors
- Sample Based
  - Heterophile antibody
  - Interfering substances

ACCF 2012 Expert Consensus Document on Practical Clinical Considerations in the Interpretation of Troponin Elevations. (2012). *Journal of the American College of Cardiology*, 60 (23), 2012.
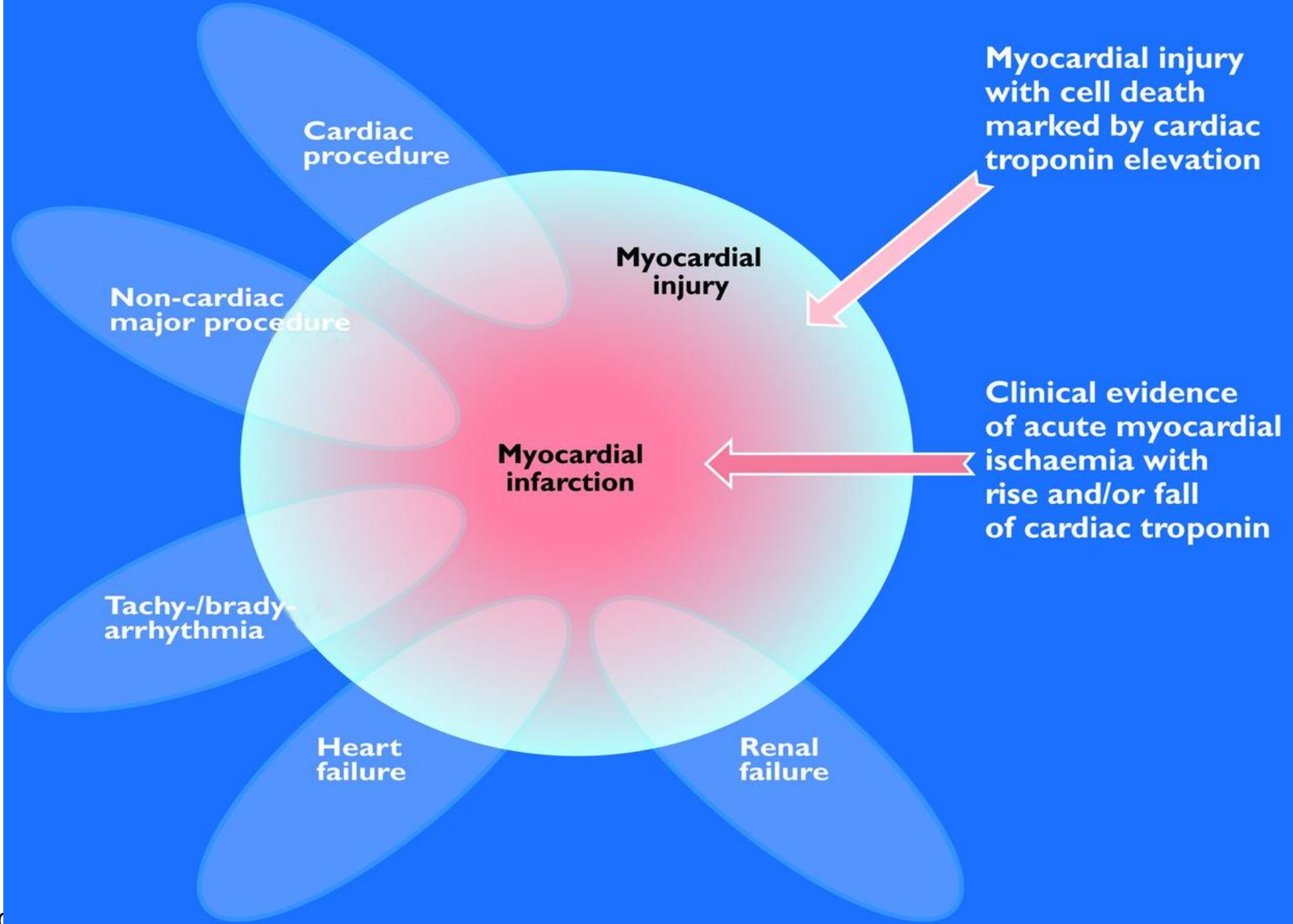
Thygesen, K., Alpert, J. S., Jaffe, A. S., Simoons, M. L., Chaitman, B. R., White, H. D., . . . Mendis, S. (2012). Third universal definition of myocardial infarction. *Circulation*, 126(16), 2020-2035. doi: 10.1161/CIR.0b013e31826e1058

Table 5. Summary of Recommendations for Cardiac Biomarkers and the Universal Definition of MI

Recommendations	COR	LOE	References
Diagnosis			
Measure cardiac-specific troponin (troponin I or T) at presentation and 3–6 h after symptom onset in all patients with suspected ACS to identify pattern of values	I	A	21, 64, 67–71, 152–156
Obtain additional troponin levels beyond 6 h in patients with initial normal serial troponins with electrocardiographic changes and/or intermediate/high risk clinical features	I	A	21, 72–74, 157
Consider time of presentation the time of onset with ambiguous symptom onset for assessing troponin values	I	A	67, 68, 72
With contemporary troponin assays, CK-MB and myoglobin are not useful for diagnosis of ACS	III: No Benefit	A	158–164
Prognosis			
Troponin elevations are useful for short- and long-term prognosis	I	B	71, 73, 165, 166
Remeasurement of troponin value once on d 3 or 4 in patients with MI may be reasonable as an index of infarct size and dynamics of necrosis	IIb	B	164, 165
BNP may be reasonable for additional prognostic information	IIb	B	87, 88, 167–171

3.2. Diagnosis of NSTE-ACS

Class I

1. *12-Lead:* Symptoms suggestive of ACS should receive and receive and have interpreted within 10 minutes (LOE C)

2. Serial cardiac troponin I or T levels should be obtained at presentation and 3 to 6 hours after symptom onset to assess rise and/or fall of the troponin level (LOE A)

5. Risk scores should be used to assess prognosis in patients with NSTE-AC (LOE A)

Examples of Risk Stratification Models

- **TIMI:** **T**hrombolysis **I**n **M**yocardial **I**nfarction
- **GRACE:** **G**lobal **R**egistry of **A**cute **C**oronary **E**vents
- **PURSUIT:** Glycoprotein IIb/IIIa in Unstable Angina: Receptor Suppression Using Integrilin Therapy
- **The Sanchis Score**
- **Vancouver Rule**
- **HEART** (History, ECG, Age, Risk Factors, and Troponin)
- **HEARTS3 Score**
- **Hess Prediction Rule**

The Key is Whatever Model is Used it Must be <u>Evidence Based</u> and should be universally adopted (Systems of Care)

Measuring the Back End of NSEMI Care

Mission: Lifeline NSTE-ACS Measures: Percentage of patients hospitalized with NSTEMI who were referred to an early outpatient cardiac rehabilitation/secondary prevention program.

Importance: These programs provide patients with education, regular exercise, monitoring risk factors, and addressing lifestyle modifications needed to achieve optimum health

GUIDELINE: 6.3.1 Cardiac Rehabilitation and Physical Activity: Recommendations (p. e379)

Class I
1. *All eligible patients with NSTE-ACS should be referred to a comprehensive cardiovascular rehabilitation program either before hospital discharge or during the first outpatient visit*
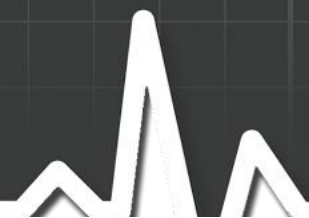
Cardiac Rehabilitation Patient Referral From an Inpatient Setting

Measure	Inclusion/Exclusion Criteria	
Percentage of patients hospitalized with non-ST elevation-acute coronary syndrome (NSTE-ACS) who were referred to an early outpatient cardiac rehabilitation/secondary prevention (CR) program.	**Inclusions**	
	All NSTE-ACS admissions	**Seq. # 4030**: STEMI or STEMI Equivalent = *No* **AND** **Seq. # 10000**: Positive Cardiac Markers w/in First 24 Hours = *Yes*
	Arrival time and DOB are not missing	**Seq. #3200 & 3201**: Arrival Date/Time are not missing **AND** **Seq. #2050**: Birth Date is not missing
	Exclusions	
	Age < 18	**Seq. #2050**: Birth Date is not missing **AND** Age is <18
	Comfort measures only	**Seq. # 11010**: Comfort Measures Only = *Yes*
	Patients discharged/ transferred to hospice	**Seq. # 11110**: Hospice Care = *Yes*
	Patients discharged/ transferred to another acute care facility or who leave against medical advice	**Seq. # 11105**: Discharge Location = *Other acute care hospital* or = *Left against medical advice*
	Patients who expire	**Seq. # 11100**: Discharge Status = *Deceased*
	Patients who have a documented medical, patient or system reason why a referral to cardiac rehabilitation was not made.	**Seq. # 11104**: Cardiac Rehabilitation Referral = *No-Medical Reason* or = *No-Patient Reason/Preference* or = *No-Health Care System Reason*

Mission: Lifeline NSTE-ACS Measures: Percentage of patients hospitalized with NSTEMI with reduced Left Ventricular Ejection Fraction (< 40%) who are prescribed an Angiotensin-Converting-Enzyme Inhibitor (ACE Inhibitor) or an Angiotensin II Receptor Blocker (ARB) at discharge.

Importance: ACE inhibitors reduce mortality in patient with recent MI who has left ventricular dysfunction (EF <40%)

GUIDELINE: 4.2. Inhibitors of the Renin-Angiotensin-Aldosterone System: Recommendations (p. 363)
CLASS I
1. ACE inhibitors should be started and continued indefinitely in all patients with LVEF less than 40% and in those with HTN, DM, or stable CKD (LOE A)
2. ARBs are recommended in patients with HF or MI with LVEF less ant 40% who are ACE inhibitor intolerant (LOE A)
3. Aldosterone blockade is recommended in patient post-MI without significant renal dysfunction or hyperkalemia who are receiving therapeutic doses of ACE inhibitor and beta blocker and have a LVEF 40% or less, MD or HF (LOE A)

ACE Inhibitor or ARB Prescribed at Discharge

Measure	Inclusion/Exclusion Criteria	
	Inclusions	
Percentage of patients hospitalized with non-ST elevation-acute coronary syndrome (NSTE-ACS) with reduced Left Ventricular Ejection Fraction (< 40%) who are prescribed an Angiotensin-Converting-Enzyme Inhibitor (ACE Inhibitor) or an Angiotensin II Receptor Blocker (ARB) at discharge.	All NSTE-ACS admissions	**Seq. # 4030**: STEMI or STEMI Equivalent = *No* **AND** **Seq. # 10000**: Positive Cardiac Markers w/in First 24 Hours = *Yes*
	Arrival time and DOB are not missing	**Seq. #3200 & 3201**: Arrival Date/Time are not missing **AND** **Seq. #2050**: Birth Date is not missing
	LVEF is not missing	**Seq. # 7010**: LVEF is not missing and is less than 40%
	Exclusions	
	Age < 18	**Seq. #2050**: Birth Date is not missing **AND** Age is <18
	Comfort measures only	**Seq. # 11010**: Comfort Measures Only = *Yes*
	Patients discharged/ transferred to hospice	**Seq. # 11110**: Hospice Care = *Yes*
	Patients discharged/ transferred to another acute care facility or who leave against medical advice	**Seq. # 11105**: Discharge Location = *Other acute care hospital* or = *Left against medical advice*
	Patients who expire	**Seq. # 11100**: Discharge Status = *Deceased*
	Patients with contraindications to both ACE Inhibitors and ARBs.	**Seq. # 6320**: ACE Inhibitor at Discharge = *Contraindicated* **AND** **Seq. # 6370**: Angiotensin Receptor Blocker at Discharge = *Contraindicated*

Mission: Lifeline NSTE-ACS Measures: Percentage of medically managed patients with NSTEMI who were prescribed dual antiplatelet therapy (aspirin and appropriate P2Y12 inhibitor) at discharge.

Importance: Cardioprotective therapy and symptom management

GUIDELINE: 6.2.1 Late Hospital and Post hospital Oral Antiplatelet Therapy: Recommendations (p. e376)
Class I
- Aspirin should be continued indefinitely (LOE A)
- In addition to Aspirin, a P2Y12 inhibitor should be continued for up to 12 months in all patients with NSTE-ACS without contraindications who are treated with ischemia-guided strategy (LOE B)
- In patients receiving a stent during PCI for NSTE-ACS, P2Y12 inhibitor therapy should be given for at least 12 months (LOE B)

Dual Antiplatelet Therapy Prescribed at Discharge

Measure	Inclusion/Exclusion Criteria	
Percentage of medically managed patients with non-ST elevation-acute coronary syndrome (NSTE-ACS) who were prescribed dual antiplatelet therapy (aspirin and appropriate P2Y$_{12}$ inhibitor) at discharge.	**Inclusions**	
	All NSTE-ACS admissions	**Seq. # 4030**: STEMI or STEMI Equivalent = No **AND** **Seq. # 10000**: Positive Cardiac Markers w/in First 24 Hours = Yes
	Arrival time and DOB are not missing	**Seq. #3200 & 3201**: Arrival Date/Time are not missing **AND** **Seq. #2050**: Birth Date is not missing
	Patients who did not have a PCI with or without stent placement or a CABG during this hospital admission	Seq. #: 7100 Name: PCI = *No* **AND** Seq. # 7200: CABG = *No*
	Exclusions	
	Age < 18	**Seq. #2050**: Birth Date is not missing **AND** Age is <18
	Comfort measures only	**Seq. # 11010**: Comfort Measures Only = *Yes*
	Patients discharged/ transferred to hospice	**Seq. # 11110**: Hospice Care = *Yes*
	Patients discharged/ transferred to another acute care facility or who leave against medical advice	**Seq. # 11105**: Discharge Location = *Other acute care hospital* or = *Left against medical advice*
	Patients who expire	**Seq. # 11100**: Discharge Status = *Deceased*
	Patients who are discharged on warfarin	**Seq. #: 6220**: Warfarin at Discharge = *Yes*
	Patients with contraindications to aspirin or P2Y$_{12}$ inhibitors	**Seq. # 6020**: Aspirin at Discharge = *Contraindicated* **OR** **Seq. # 6070**: Clopidogrel at Discharge = *Contraindicated* **OR** **Seq. # 6190**: Ticagrelor at Discharge = *Contraindicated* **OR** **Seq. # 6170**: Prasugrel at Discharge = *Contraindicated*

Mission: Lifeline NSTE-ACS Measures Continued: Percentage of patients hospitalized with NSTEMI whose left ventricular (LV) systolic function was evaluated during admission or is planned for after discharge.

Importance: Assess of LV function is recommended because depressed LV function will influence pharmacological therapies, may suggest the presence of more extensive CAD, and may influence the choice of revascularization

No specific guideline could be identified linking with this patient assessment factor.
The key talking point would be that them knowing the LV function dictates the medical therapy the patient will receive

Evaluation of LV Systolic Function

Measure	Inclusion/Exclusion Criteria	
Percentage of patients hospitalized with non-ST elevation-acute coronary syndrome (NSTE-ACS) whose left ventricular (LV) systolic function was evaluated during admission or is planned for after discharge	**Inclusions**	
	All NSTE-ACS admissions	**Seq. # 4030**: STEMI or STEMI Equivalent = *No* **AND** **Seq. # 10000**: Positive Cardiac Markers w/in First 24 Hours = *Yes*
	Arrival time and DOB are not missing	**Seq. #3200 & 3201**: Arrival Date/Time are not missing **AND** **Seq. #2050**: Birth Date is not missing
	Exclusions	
	Age < 18	**Seq. #2050**: Birth Date is not missing **AND** Age is <18
	Comfort measures only	**Seq. # 11010**: Comfort Measures Only = *Yes*
	Patients discharged/ transferred to hospice	**Seq. # 11110**: Hospice Care = *Yes*
	Patients discharged/ transferred to another acute care facility or who leave against medical advice	**Seq. # 11105**: Discharge Location = *Other acute care hospital* or = *Left against medical advice*
	Patients who expire	**Seq. # 11100**: Discharge Status = *Deceased*

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Mission: Lifeline NSTE-ACS Measures Continued: Percentage of patients hospitalized with NSTEMI who receive smoking cessation advice/counseling during admission.

Importance: The goals of therapy after STE-ACS are to restore th patent to normal activities to the extent possible and to use the acute even to re-evaluate the plan of care, particularly lifestyle and risk factor modification. This is a teachable moment.

GUIDELINE: 6.2 Medical regimen and use of Medications at Discharge: Recommendations (e376)

Class I
…
7. Before discharge, patients should be educated about modification of cardiovascular risk factors (LOE C)

Adult Smoking Cessation Advice/Counseling

Measure	Inclusion/Exclusion Criteria	
Percentage of patients hospitalized with non-ST elevation-acute coronary syndrome (NSTE-ACS) who receive smoking cessation advice/counseling during admission.	**Inclusions**	
	All NSTE-ACS admissions	**Seq. # 4030:** STEMI or STEMI Equivalent = *No* **AND** **Seq. # 10000:** Positive Cardiac Markers w/in First 24 Hours = *Yes*
	Arrival time and DOB are not missing	**Seq. #3200 & 3201:** Arrival Date/Time are not missing **AND** **Seq. #2050:** Birth Date is not missing
	Patients with a history of smoking cigarettes anytime during the year prior to arrival.	**Seq. # 5020:** Current/Recent Smoker (w/in 1 year) = *Yes*
	Exclusions	
	Age < 18	**Seq. #2050:** Birth Date is not missing **AND** Age is <18
	Comfort measures only	**Seq. # 11010:** Comfort Measures Only = *Yes*
	Patients discharged/ transferred to hospice	**Seq. # 11110:** Hospice Care = *Yes*
	Patients discharged/ transferred to another acute care facility or who leave against medical advice	**Seq. # 11105:** Discharge Location = *Other acute care hospital* or = *Left against medical advice*
	Patients who expire	**Seq. # 11100:** Discharge Status = *Deceased*

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Mission: Lifeline NSTE-ACS Measures Continued: Not included in measures but worth mentioning

Importance: The development of national system of ACS is crucial and includes the participation of key stakeholders to evaluate care using standardized performance and quality-improvement measures of ACS. Registries are associated with improved outcomes.

GUIDELINE: Use of performance measures and registries: Recommendation: Pg e393
Class IIa
1. Participation in a standardized quality-of-care data registry designed to track and measure outcomes, complications, and performance measures can be beneficial in improving the quality of NSTE-ACS care (LOE B)