CCN CATH REFERRAL FORM: NEW/REVISED DATA DEFINITIONS

CCS/ACS Symptom Classification Scales: The following changes have been made to the CCS classification to update risk stratification for both stable CAD and acute coronary syndrome patients (ACS = unstable angina (UA), non-ST segment elevation MI (NSTEMI) and ST-segment elevation MI (STEMI)).

Use Table 1: CCS Angina classification for stable CAD patients, Table 2: ACS risk classification for ACS patients (UA, NSTEMI and STEMI), and Table 3 for Emergent Patients

TABLE 1: CCS CLASSIFICATION FOR STABLE CAD

CCS ANGINA CLASS	CRITERIA
0	Asymptomatic
I	Ordinary physical activity such as walking or climbing stairs does not cause angina. Angina with strenuous, rapid, or prolonged exertion at work or recreation
II	Slight limitation of ordinary activity. Walking or climbing stairs rapidly, walking uphill, walking or stair climbing after meals, or in cold, or in wind or under emotional stress, or during the few hours after awakening. Walking more than 2 blocks on the level and climbing more than one flight of stairs at a normal pace and in normal conditions.
III	Marked limitation of ordinary physical activity. Walking one or two blocks on the level or climbing one flight of stairs in normal conditions and at a normal pace.
IV	Inability to carry out any physical activity without discomfort – anginal syndrome may be present at rest.

TIMI RISK SCORE CALCULATIONS

TIMI RISK SCORE FOR UA & NSTEMI		TIMI RISK SCORE AFTER STEMI	
CRITERIA	POINTS	CRITERIA	POINTS
HISTORICAL		HISTORICAL	
☐ Age ≥65 years	1	☐ Age 65-74	2
☐ ≥3 Risk Factors for CAD	1	☐ Age >75	3
☐ Known CAD (stenosis ≥50%)	1	☐ DM/HTN or Angina	1
☐ Aspirin use in past 7 days	1	EXAM	
PRESENTATION		☐ SBP <100	3
☐ Recent (≤24 hrs) severe angina	1	☐ HR >100	2
☐ ST segment deviation ≥0.5 mm	1	☐ Killop (NYHA) II-IV	2
☐ Elevated Cardiac Markers	1	☐ Weight < 67 kg	1
RISK SCORE = TOTAL	0-7	PRESENTATION	
Check the criteria that applies to this patient and apply the risk score to the CCS/ACS Angina Class Risk Category in Table 2.		☐ Anterior STE or LBBB	1
		☐ Time to rx > 4 hrs.	1
		RISK SCORE = TOTAL	0-14

Use the criteria in Section A for unstable angina or NSTEMI patients. Use the criteria in Section B for STEMI patients not treated by Primary PCI.

TABLE 2: ACS RISK STRATIFICATION

RISK CATEGORY[1]	SECTION A For UA or NSTEMI Use either TIMI Risk Score *OR* ACC/AHA Criteria for UA or NSTEMI		SECTION B For STEMI not treated by Primary PCI Use either TIMI Risk Score *OR* ACC/AHA Criteria after STEMI	
	TIMI Risk Score for UA/NSTEMI	ACC/AHA Criteria (any one of the following)	TIMI Risk Score after STEMI	ACC/AHA Criteria (any one of the following)
☐ Low	TIMI Risk Score 1-2 ☐	☐ No or minimum troponin rise (<1.0 ng/ml)[2] ☐ No further Chest Pain ☐ Inducible ischemia ≥ 7 MET's workload ☐ Age < 65 years[3]	TIMI Risk Score 0-3 ☐	☐ LVEF ≥ 40% ☐ Low risk on non-invasive assessment such as: Duke treadmill score ≥5.
☐ Intermediate	TIMI Risk Score 3-4 ☐	☐ NSTEMI with small troponin rise (≥1<5 ng/ml)[2] ☐ Worst ECG T wave inversion or flattening ☐ Significant LV dysfunction (EF<40%) ☐ Previous documented CAD, MI or CABG, PCI	TIMI Risk Score 4-5 ☐	☐ Absence of high risk predictors (above) ☐ LVEF < 40% ☐ High or intermediate risk on non-invasive assessment such as: Duke treadmill score < 5, stress-induced large anterior or multiple perfusion defects.
☐ High	TIMI Risk Score 5-7 ☐	☐ Persistent or recurrent chest pain ☐ Dynamic ECG changes with chest pain ☐ CHF, hypotension, arrhythmias with C/P ☐ Moderate or high (>5 ng/ml) Troponin Rise[2] ☐ Age > 75 years[3]	TIMI Risk Score >5 ☐	☐ Failed reperfusion (recurrent chest pain, persistent ECG findings of infarction) ☐ Mechanical complications (sudden heart failure, new murmur) ☐ Change in clinical status (shock)

Notes: 1. If clinical parameters result in two different risk classifications (e.g. high risk and emergent for shock) then the higher classification takes precedent.
2. Troponin I levels are institution dependent based upon the assay used and must be used and interpreted accordingly. Troponin T levels are universal due to a single system of standards.
3. Age is not to be used alone to determine risk category.

TABLE 3

☐ Emergent	Shock, primary PCI, rescue PCI and facilitated PCI for STEMI.

HEART FAILURE CLASSIFICATION (NYHA FUNCTIONAL CLASS)

CLASS I - No symptoms with ordinary physical activity.
CLASS II - Symptoms with ordinary activity. Slight limitations of activity.
CLASS III - Symptoms with less than ordinary activity. Marked limitation of activity.
CLASS IV - Symptoms with any physical activity or even at rest.

REST ECG (ISCHEMIC CHANGES AT REST)

UNINTERPRETABLE: Significant resting ST segment depression, or Left Bundle Branch Block, or LVH, or Digoxin therapy, or paced Vrhythm or WPW.

FUNCTIONAL IMAGING RISK

HIGH RISK - clear evidence of multi-vessel disease OR single vessel disease involving a large segment of the anterior wall OR summed stress score > 12 segments OR transient ischemia LV cavity dilation.
LOW RISK - Absence of high risk criteria.

Functional imaging includes exercise or pharmacological stress (either dipyridamole/ Persantine or adensosine or dobutamin/Dobutrex) with either 1) nuclear/PET perfusion imaging (thallium, MIBI or rubidium) or 2) nuclear ventriculography (MUGA); or 3) echocardiography.

EXERCISE ECG RISK

HIGH RISK – patient demonstrates any of the following: a) ≥ 2.5mm ST depression or ST elevation > 1mm in leads without q waves at low work loads (heart rate < 120); OR b) early onset ST segment changes or angina in 1st stage (3 min); OR c) ST segment depression lasting longer than 8 minutes into recovery stage; OR d) max HR < 120 on no cardio-inhibitory medication; or e) SBP lowered at least by 10mm Hg; OR f) 3 or more beats of ventricular tachycardia; OR g) Duke treadmill score <-10.
LOW RISK - Absence of high risk criteria.
UNINTERPRETABLE - Significant resting ST segment depression, or Left Bundle Branch Block, or LVH, or Digoxin therapy, or paced Vrhythm or WPW.