Description: This document contains the 15 performance measures that were approved by CMS for use in ASNC's 2017 Qualified Clinical Data Registry (QCDR). Physicians are required to report at least 6 measures with at least one Outcome measure. IMPORTANT: Performance rates of 0% for normal measures and 100% for inverse measures will not count towards the six measure minimum.

Measure ID	ASNC 1
Measure Title	Cardiac Stress Nuclear Imaging Not Meeting Appropriate Use Criteria: Preoperative Evaluation in Low Risk Surgery Patients
Measure Description	Percentage of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on low-risk surgery patients 18 years or older for preoperative evaluation.
Numerator	Number of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on low-risk surgery patients for preoperative evaluation within 30 days preceding low-risk non-cardiac surgery
Denominator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients aged 18 years and older during the reporting period.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	Y
Rationale	Cardiac imaging is a mainstay in medical decision-making for patients with known or suspected heart disease. However, expenditures related to imaging comprise a significant portion of the health care budget. Much scrutiny has been focused on cardiovascular imaging with regard to the potential for overuse, especially in view of substantial geographic variation in ordering patterns and the limited amount of evidence-based data supporting the use of imaging as it relates to patient outcomes. Given the significant contribution of heart disease to morbidity and mortality and the prevalence of cardiovascular disease, it is important to determine the appropriate use of diagnostic tests such as stress SPECT and stress PET myocardial perfusion imaging.
Measure ID	ASNC 2
Measure Title	Cardiac Stress Nuclear Imaging Not Meeting Appropriate Use Criteria: Routine Testing After Percutaneous Coronary Intervention (PCI)
Measure Description	Percentage of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients aged 18 years and older routinely after percutaneous coronary intervention (PCI), with reference to timing of test after PCI and symptom status.
Numerator	Number of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on asymptomatic patients within 2 years of the most recent PCI.
Denominator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients aged 18 years and older during the reporting period.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority

Outcome	
Inverse Measure	Y
Rationale	Diagnostic testing, such as stress SPECT and stress PET myocardial perfusion imaging, is used to detect disease and provide risk assessment used to modify treatment strategies and approaches. Information provided by such testing can initiate, modify and stop further treatments for coronary heart disease (medications and revascularization) which have an impact on patient outcome. In addition, false positives and false negatives can adversely impact the patient and their treatment outcomes. Lastly, radiation from stress SPECT and stress PET pose a minimal but still important consideration for patient safety. Ensuring proper patient selection can avoid using resources in patients not expected to benefit from the testing and for which the associated risks would be unnecessary.
Measure ID	ASNC 3
Measure Title	Cardiac Stress Nuclear Imaging Not Meeting Appropriate Use Criteria: Testing in Asymptomatic, Low-Risk Patients
Measure Description	Percentage of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on asymptomatic, low coronary heart disease (CHD) risk patients 18 years and older for initial detection and risk assessment.
Numerator	Number of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on asymptomatic, low CHD risk patients for initial detection and risk assessment.
Denominator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients aged 18 years and older during the reporting period.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	Y
Rationale	Diagnostic testing, such as stress SPECT and stress PET myocardial perfusion imaging, is used to detect disease and provide risk assessment used to modify treatment strategies and approaches. Information provided by such testing can initiate, modify and stop further treatments for coronary heart disease (medications and revascularization) which have an impact on patient outcomes. In addition, false positives and false negatives can adversely impact the patient and their treatment outcomes. Lastly, radiation from stress SPECT and stress PET pose a minimal but still important consideration for patient safety. Ensuring proper patient selection can avoid using resources in patients not expected to benefit from the testing and for which the associated risks would be unnecessary.
Measure ID	ASNC 4
Measure Title	Utilization of standardized nomenclature and reporting for nuclear cardiology imaging studies
Measure Description	Percentage of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients where standardized nomenclature and reporting was used and the standardized nomenclature was used in the institution's computer systems.
Numerator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed on patients where standardized nomenclature and reporting was used and the standardized nomenclature was used in the institution's computer systems.
Denominator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed.
Denominator Exclusions	None

Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	N
Rationale	A SPECT or PET myocardial perfusion imaging report is the final product of a complicated process designed to produce high quality and valuable patient data. As such, it must contain sufficient information to convey the details of the procedure while simultaneously remaining succinct. The report should provide a basic ''bottom line'' result to the referring physician. It should follow a defined structure and contain standardized data elements so that test results are portable as patients move through the healthcare system. The structured report is an integral part of the electronic health care record, and is necessary for defining quality in all nuclear cardiology practices. As the healthcare community moves away from open reporting, the implementation of structured reporting is expected to improve quality and outcomes and to reduce cost.

Measure ID	ASNC 13
Measure Title	SPECT-MPI studies meeting appropriate use criteria
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies performed that are appropriate.
Numerator	Number of denominator eligible studies performed where studies performed were appropriate.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	N
Rationale	The overuse of SPECT myocardial perfusion imaging has been a recent focus of medical societies and has led to the development of more stringent appropriate use criteria (AUC). As diagnostic imaging modalities evolve, it's vital that patients receive the appropriate imaging study and for the right reason. This measure will assess a physician's interpretation of the appropriate use criteria for nuclear cardiac imaging studies and ultimately reduce the amount of studies performed for indications that are rarely appropriate

Measure ID	ASNC 14
Measure Title	PET-MPI studies meeting appropriate use criteria
Measure Description	Percentage of Positron Emission Tomography (PET) Myocardial Perfusion Imaging (MPI) studies performed that are appropriate.
Numerator	Number of denominator eligible studies performed where studies performed were appropriate.
Denominator	Number of PET-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	

Inverse Measure	N
Rationale	The overuse of PET myocardial perfusion imaging has been a recent focus of medical societies and has led to the development of more stringent appropriate use criteria (AUC). As diagnostic imaging modalities evolve, it's vital that patients receive the appropriate imaging study and for the right reason. This measure will assess a physician's interpretation of the appropriate use criteria for nuclear cardiac imaging studies and ultimately reduce the amount of studies performed for indications that are rarely appropriate.

Measure ID	ASNC 17
Measure Title	SPECT-MPI studies not Equivocal
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies performed that are not equivocal.
Numerator	Number of denominator eligible studies performed where the results were not equivocal.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	N
Rationale	A SPECT myocardial perfusion imaging study that is equivocal, is neither positive or negative thus can't be used to diagnose the patient. An equivocal study will require a repeat diagnostic study be performed. This study may include CT, Catheterization, or PET. The additional study results in a delay in the patient's treatment plan, higher costs, and many times increased radiation exposure.

Measure ID	ASNC 18
Measure Title	PET-MPI studies not Equivocal
Measure Description	Percentage of Positron Emission Tomography (PET) Myocardial Perfusion Imaging (MPI) studies performed that are not equivocal.
Numerator	Number of denominator eligible studies performed where the results were not equivocal.
Denominator	Number of PET-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	
Inverse Measure	N
Rationale	A PET myocardial perfusion imaging study that is equivocal, is neither positive or negative thus can't be used to diagnose the patient. An equivocal study will require a repeat diagnostic study be performed. This study may include CT, Catheterization, or SPECT. The additional study results in a delay in the patient's treatment plan, higher costs, and many times increased radiation exposure.

Measure ID	ASNC 19
Measure Title	Imaging Protocols for SPECT and PET MPI studies - Use of stress only protocol
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) and Positron

Emission Tomography (PET) Myocardial Perfusion Imaging (MPI) studies performed where the imaging protocol used was stress only.

Numerator	Number of denominator eligible studies performed where the imaging protocol used was stress only.
Denominator	All instances of normal stress nuclear Myocardial Perfusion Imaging (MPI) studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	Outcome
Inverse Measure	N
Rationale	A SPECT or PET myocardial perfusion imaging study using a 'stress only' imaging protocol, reduces the amount of radiopharmaceuticals administered to the patient. Limiting the amount of radiation given will likely reduce the potential harmful effects of accumulative radiation exposure.

Measure ID	ASNC 20
Measure Title	SPECT-MPI studies performed without the use of thallium
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies performed without the use of thallium.
Numerator	Number of denominator eligible studies performed where the radiopharmaceutical Thallium was not used.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	Outcome
Inverse Measure	N
Rationale	A SPECT myocardial perfusion imaging study performed, without the use of Thallium, significantly reduces the amount of radiation exposure to the patient.

Measure ID	ASNC 21
Measure Title	SPECT-MPI study appropriate imaging protocol selection for morbidly obese patients
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies performed on morbidly obese patients where the Imaging Protocol included two days.
Numerator	Number of denominator eligible studies performed where the imaging protocol used was Rest/Stress 2-Day or Stress/Rest 2-day.
Denominator	Number of SPECT-MPI studies performed where the BMI >= 40.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	High Priority
Outcome	Outcome
Inverse Measure	N

Rationale	High quality imaging requires selection of an imaging protocol designed to give the best quality diagnostic quality image for review. Individual patient characteristics play an essential role in the selection of the optimal imaging protocol. This measure is designed to assess the appropriate protocol selection for patients with obesity referred for radionuclide myocardial perfusion imaging. Additionally it will lend insight as to whether or not the lab practices patient centered imaging or uses one protocol for everyone referred.

Measure ID	ASNC 22
Measure Title	SPECT and PET MPI studies reporting Left Ventricular Ejection Fraction
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) and Positron Emission Tomography (PET) Myocardial Perfusion Imaging (MPI) studies where the Left Ventricle Ejection Fraction was calculated and included in the report.
Numerator	Number of denominator eligible studies performed where the Left Ventricle Ejection Fraction was calculated and reported.
Denominator	All instances of stress nuclear Myocardial Perfusion Imaging (MPI) studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	
Outcome	
Inverse Measure	N
Rationale	Ejection fraction is a powerful risk predictor and is critical in decision making (medical therapy vs revascularization and percutaneous vs surgical revascularization). Unless there is a difficulty in obtaining a reliable gating (erratic arrhythmias), left ventricular ejection fraction should be calculated and reported.

Measure ID	ASNC 23
Measure Title	SPECT-MPI study clinical utilization of Attenuation Correction image acquisition
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies using Attenuation Correction.
Numerator	Number of denominator eligible studies performed where an Attenuation Correction of CT or Transmission was used or an Attenuation Correction of "Prone" was documented for patients.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority	
Outcome	
Inverse Measure	N
Rationale	Attenuation correction can improve the diagnostic accuracy particularly in patients with challenging body habitus (obese, large chested, dense breast tissue, breast prosthesis). When available, attenuation tools with CT, fluorescent radiation, or line source should be used. When these tools are not available to the laboratory, the simple measure of prone imaging (in addition to standard supine acquisition) can improve the specificity in interpreting inferior wall defect by allowing to differentiate diaphragmatic attenuations from inferior wall perfusion abnormality.

Measure ID	ASNC 24
Measure Title	SPECT-MPI study utilization of exercise as a stressor
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies using a Stress Test Type that includes exercise.
Numerator	Number of denominator eligible studies performed where the Stress Test Type was exercise.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	Patients with Left Bundle Branch Block (LBBB), a pacemaker or who are unable to exercise.
Denominator Exceptions	None
High Priority Outcome	High Priority
Inverse Measure	N
Rationale	When a patient is able to exercise, exercise stress modality is usually preferred over pharmacologic stress with the exception of patients with LBBB or implantable electronic pacing device. Exercise provides valuable diagnostic and prognostic information that cannot be obtained from pharmacologic stress. Moreover, image quality and diagnostic accuracy is improved with exercise stress. Thus, patients who are able have no contraindication to exercise should undergo exercise stress when SPECT-MPI is performed.

Measure ID	ASNC 25
Measure Title	SPECT-MPI study adequate exercise testing performed
Measure Description	Percentage of Single Photon Emission Computed Tomography (SPECT) Myocardial Perfusion Imaging (MPI) studies performed where the stress heart rate >= 85% of maximum heart rate and three or more minutes of exercise.
Numerator	Number of denominator eligible studies performed where the stress heart rate >= 85% of maximum heart rate and three or more minutes of exercise.
Denominator	Number of SPECT-MPI studies performed.
Denominator Exclusions	None
Denominator Exceptions	None
High Priority Outcome	
Inverse Measure	N
Rationale	Submaximal heart rate during exercise stress lowers the diagnostic sensitivity for the detection of CAD. Achieving >85% age predicted maximal heart rate is an important indicator of laboratory best practice to achieve impactful clinical outcomes. Conversion of exercise to vasodilator stress in those patients unable to achieve >85% age predicted maximal heart rate is an important marker of clinical quality performance.