CARDIAC CARE NETWORK

Indications for CARDIAC PET IMAGING

1. Insured Services Relevant to Cardiac PET imaging

- **FDG PET Services :**
  - **Myocardial viability assessment** in a patient suitable for a cardiac revascularization procedure or cardiac transplantation with moderate to severe ischemic left ventricular dysfunction (left ventricular ejection fraction of 40% or less) despite maximal therapy; and prior myocardial viability or stress imaging assessment with another modality (i.e. SPECT using thallium, MIBI or dobutamine stress echocardiography) which has been equivocal for viability or demonstrated insufficient viable myocardium or a patient with severe ischemic left ventricular dysfunction and known multi-vessel coronary disease (determined by coronary angiography) who urgently requires an assessment of myocardial viability.
- **Other Relevant Cardiac Nuclear Imaging Services Not Specific to PET**
  - **Myocardial Perfusion Imaging** (at rest and/or during hyperemic stress) in patients with known or suspected or to rule out significant coronary artery disease (applies to any nuclear imaging modality capable of imaging perfusion). In general PET yields greater accuracy for those who cannot adequately exercise and less radiation exposure than SPECT. It is particularly useful in obese patients and others prone to SPECT attenuation artifact, in young patients (men<40 , women < 50) to reduce radiation exposure compared to SPECT, following equivocal or non-diagnostic testing, in patients with known disease requiring high accuracy to direct revascularization, in patients with suspected multi-vessel or micro-vascular disease requiring absolute flow quantification.

2. Cardiac Registry Indications

These indications are eligible for reimbursement through the Ontario Cardiac PET Registry.

- **Cardiac Sarcoidosis**: for determination of active cardiac sarcoid in patients with pulmonary/systemic sarcoidosis or patients who have unexplained heart block, ventricular arrhythmias, non-ischemic causes of congestive heart failure; and evaluation of cardiac sarcoidosis therapy response if disease is shown to be active on prior scans. Cardiac MR imaging may be considered initially to determine the presence of cardiac sarcoid granuloma.

3. PET Access Program

These indications are eligible for reimbursement through the Ontario PET Special Access Program

- **FDG: aortitis; myocarditis; viability w EF > 40%; other suspected cardiac metabolic abnormality with supporting evidence.**

4. Clinical Trials

- **IMAGE HF:** Randomized Controlled and Comparative Effectiveness Trial funded by CIHR comparing clinically indicated modalities for ischemia and/or viability detection– (PET vs. SPECT vs. MRI) at participating centres (currently Ottawa, London) – contact L Garrard lgarrard@ottawaheart.ca for more information.