

Transmyocardial Revascularization Update FY2010

Reimbursement Update

The Centers for Medicare and Medicaid Services final rule governing reimbursement guidelines and rates for fiscal 2010 recognizes that patients receiving Transmyocardial Revascularization (TMR) – as a sole therapy or as an adjunct to CABG – consume additional resources, therefore when ICD-9-CM 36.31 or 36.32 is used cases will typically map to the “Other Cardiothoracic Procedures” MS-DRGs 228,229,230. *Some diagnoses that are common in patients that receive TMR are in the table below.*

DRG Code	Description	2010 Avg. Medicare DRG Payment	Percent Inc./Dec.
233	Coronary bypass with cardiac catheterization with Major Complication or Co-morbidity	\$36,165	N/A
234	Coronary bypass with cardiac catheterization without Major Complication or Co-morbidity	\$24,137	N/A
235	Coronary bypass without cardiac catheterization with Major Complication or Co-morbidity	\$29,717	N/A
236	Coronary bypass without cardiac catheterization without Major Complication or Co-morbidity	\$18,870	N/A
228	Other Cardiothoracic Procedures with Major Complication or Co-morbidity	\$39,383	\$1,157 to \$9,666
229	Other Cardiothoracic Procedures with Complication or Co-morbidity	\$25,294	\$1,157 to \$6,424
230	Other Cardiothoracic Procedures without Major Complication or Co-morbidity/ without Complication or Co-morbidity	\$19,842	(\$4,295) to \$972

ICD-9 Code	Description – Any of these diagnosis codes typically map a patient to MS-DRG 229.
411.1	Intermediate Coronary Syndrome
411.81	Other acute and subacute forms of ischemic heart disease, acute ischemic heart disease without myocardial infarction
411.89	Other acute and subacute forms of ischemic heart disease, other
413.0	Angina decubitus
414.02	Coronary atherosclerosis of autologous vein bypass graft
414.03	Coronary atherosclerosis of nonautologous biological bypass graft
414.04	Coronary atherosclerosis of artery bypass graft
V85.0	Body Mass Index less than 19, adult
V85.4	Body Mass Index 40 and over, adult
996.00	Mechanical complications of unspecified cardiac device, implant, and graft
996.03	Mechanical complication due to coronary bypass graft
996.09	Other mechanical complication of cardiac device, implant, and graft
996.72	Other complications due to other cardiac device, implant, and graft (Occlusion/Stenosis of coronary stent)

ICD-9 Code	Description
33140	TMR by thoracotomy as sole therapy
33141	TMR performed at the time of other open procedures

Clinical Update

Society Recommendations¹

TMR is recommended by the American College of Cardiology, the Society of Thoracic Surgeons and the International Society for Minimally Invasive Cardiothoracic Surgery

Perfusion Benefits

“Improved perfusion and concomitant improvement in myocardial function have been observed Post-TMR”

(J Card Surg, Horvath, KA. 2008 May-Jun;23(3):266-76).

“...there was a 20% improvement in the perfusion of previously ischemic areas in the CO2 TMR group ... There was a 27% worsening of the perfusion of ischemic areas in the medical management group at 12 months.”

(J Card Surg, Horvath, KA. 2008 May-Jun;23(3):266-76).

“...Ho:YAG studies that obtained follow up scans showed no significant difference between the TMR and medical management groups at 12 months and no significant improvement in perfusion in TMR treated patients over the same interval.”

(Horvath, K.A. Clinical Review: Transmyocardial Laser Revascularization. Journal of Cardiac Surgery 2008; 23:266-276).

Conclusions

“Cardiothoracic surgeons are increasingly faced with more complex patients who have developed a pattern of diffuse coronary artery disease and have exhausted nonsurgical options. Results replicated in multiple randomized controlled trials augmented by recently available long-term results have validated the safety, effectiveness, and substantially improved health outcomes through the application of TMR for treatment of selected patients with severe angina due to diffuse disease, when used alone or as an adjunctive therapy to achieve a more complete revascularization.”

(J Card Surg, Horvath, KA. 2008 May-Jun;23(3):266-76).

¹ACC Guidelines, 2002; STS Guidelines, 2004; ISMICS Guidelines Transmyocardial Laser Revascularization, 2006; ISMICS Consensus Conference, 2006