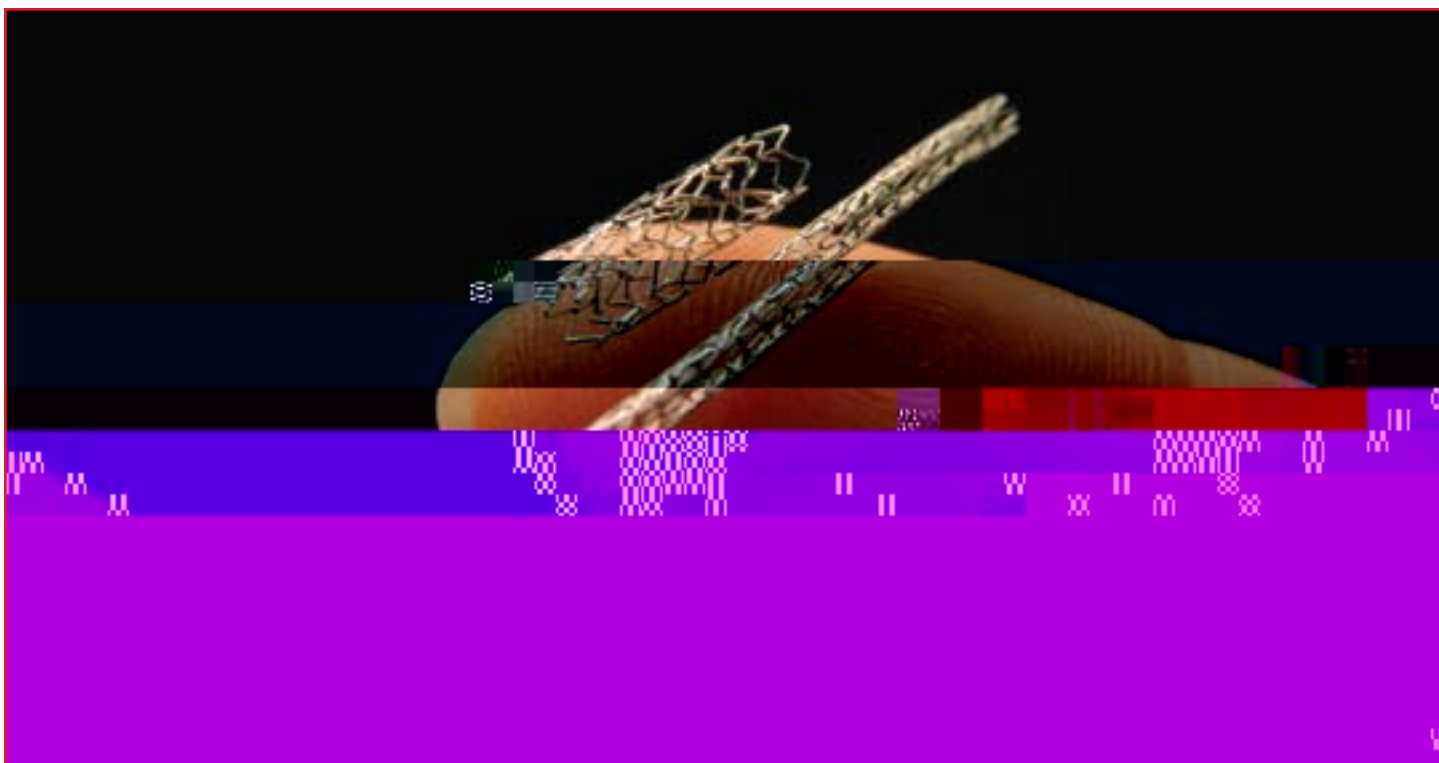




upon the overall reduction in mortality from CAD. It is not intended to be a comprehensive review of the PCI field. I intend to focus on the difficulties associated with underwriting CAD cases treated with PCI. Underwriting is not an exact science that can be applied based upon strict rules; much of the underwriting process is determined by the availability of information at the time a decision is made. I intend to document the difficulties in underwriting these cases properly when the information available is less than complete, and provide valid data to evaluate the multiple complications found with PCI procedures.

To start this process, I will present an actual case without any identifying information about the applicant or company sending this case:

CASE #1

Male, 59 years of age, smoker, 5 feet 7 inches, 180 lbs., who drinks one beer daily, and is collecting disability for chronic back pain treated with hydrocodone. This man has a very significant family history of early CAD. His mother had died of a myocardial infarction (MI) before age 60; both of his brothers had received multiple coronary bypass grafts at an early age, one at age 48. He had no personal prior cardiac history until a hospitalization in 2004 for persistent chest pain.

Because of his family history, an extensive work-up was done which showed very little: He had an EKG with a Q wave in III, and sinus bradycardia. A treadmill exercise test (TM) was done which was stopped after 9 minutes of exercise and read as negative for ischemia by the treating physicians. A nuclear perfusion scan was done at that time which showed no redistribution but did show mild hypokinesia of the septum and an ejection fraction of 54%.

Summarizing this case up to this point, this man had essentially a significant family history of CAD with a 2004 history of persistent chest pain and a cardiac work-up that included a TM and a perfusion test which were not diagnostic, although they had some minor changes. Assuming this was all the information available for underwriting purposes, a low rating might have been a correct way to assess the risk involved in this case.

However, in this case the treating doctor was highly concerned about this man's family history, so a cardiac catheterization was done with full coronary angiography. The angiogram was highly abnormal; it documented a very long obstructing lesion of the right coronary artery, with a variable degree of obstruction between 75% and 90%. The other vessels were free of disease or had minor (not hemodynamically significant) amounts of plaque.

Therefore, the case's underwriting assessment changed with the cardiac catheterization results. This man not only

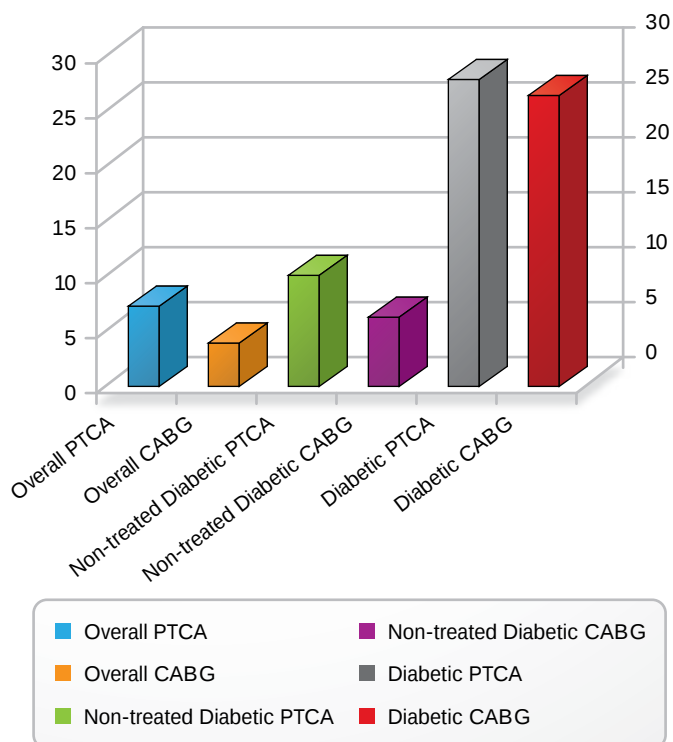
has a significant family history of CAD, and symptoms



This study did not compare survival of medically treated patients vs. patients treated with PCI. With increased use worldwide of PCI as the treatment of choice for CAD, it has

study included a subgroup of patients who were diabetics. This diabetic subgroup mortality outcome after treatment with PTCA or CABG was compared with a matched (not under diabetic treatment) subgroup's outcome with similar treatments. There was no comparison with medical therapy in this study subgroup. This diabetic study subgroup divided the patients into two groups: those with treated diabetes, and those receiving no treatment for diabetes. There was no distinction made (not enough patients) between single vessel and multivessel disease outcomes. The overall 10-year survival of these patients was 71.0% for those treated with PTCA, and 73.5% for those treated with CABG. Among the patients with no treatment for diabetes, the overall survival for those treated with PTCA and those treated with CABG was identical (77.0% and 77.3% respectively). However, the survival rate for patients with treated diabetes was much worse and favored treatment with CABG, 45.5% survival after PCI vs. 57.8% survival after CABG. These results clearly show a much worse outcome for diabetics with CAD vs. the general population with CAD, as well as a somewhat improved survival after CABG compared with the survival after treatment with PCI.

10-Year Mortality for Diabetics vs. Non-Diabetics and PCI vs. CABG



decisions may be reached. The initial case presented in this article clearly demonstrates how limited information can affect the underwriting decision. It must be remembered that all population subgroups will not have the same type of favorable outcomes as those of the general population and this knowledge must be applied to the underwriting of these cases.

This second case demonstrates once more the difficulties presented by the evaluation of such cases for underwriting purposes.

CASE #2

Female, 58 years of age. Non-smoking. Not diabetic. No family history of early cardiac disease or sudden death. High cholesterol, under treatment with Lipitor, current value 262. History of a blood clot 10 years prior with no details.

This woman had a history of a prior MI at age 49. In the early summer of 2000 she presented with increasing chest pain, clinically diagnosed as angina, and had an EKG read by her doctor as showing a septal MI. She had a TM with a stress echo performed for diagnostic purposes. The TM was not diagnostic for ischemia after exercise of 10:30 min. The stress echo showed mild septal hypokinesia with exercise, and was read as positive for ischemia.

How convincing is this history of CAD? And what severity of CAD is expected in this patient given her early age and the data supplied? If this was all the information available it would appear reasonable to classify her as having moderate to severe CAD, in my opinion.

A cardiac catheterization was done after the initial work-up. It showed no evidence of CAD, but the LAD (Left Anterior

