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In Reply—Physicians in the 21st Century: Between Identification With Medicine as a Calling and Self-Diagnosing Burnout, Depression, and Anxiety

To the Editor: I thank Mousa et al[1] for submitting a letter to the editor in response to our article titled "Association Between Physician Burnout and Identification With Medicine as a Calling."[2] Although our study assessed the relationship between burnout and calling only among practicing physicians, I would support the premise that Mousa et al posit: that is, this inverse calling-burnout association is likely to be found among medical trainees.

However, given the focus of our study, I am reluctant to claim that "lacking the sense of calling can be a critical marker of mental health illnesses."[1] Whether lacking a sense of calling is associated with psychiatric diagnoses such as major depressive or general anxiety disorder, it would seem that there are ways of assessing for such disorders more directly (eg, through the use of formal, validated screening tools as used in the Mousa et al study of medical trainees[3]) or indirectly (eg, measures of burnout) without having to invoke a lack of calling as a critical marker of such disorders.

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A Differing Opinion on Primary Percutaneous Coronary Intervention in Patients Who Have Had Cancer: Stent Choice in Onco-cardiology Revisited

To The Editor: We are writing in reference to the report of Wang et al[1] titled "Cancer History Portends Worse Acute and Long-term Noncardiac (but Not Cardiac) Mortality After Primary Percutaneous Coronary Intervention for Acute ST-Segment Elevation Myocardial Infarction," as well as the accompanying editorial by Al-Kindi and Oliveira[2] titled "Onco-Cardiology: A Tale of Interplay Between 2 Families of Diseases," published in the December 2016 issue of *Mayo Clinic Proceedings*. Specifically, we wish to expound upon our differing opinion on the use of coronary artery stents in select onco-cardiology patients.

The study by Wang et al[1] demonstrated the importance of aggressive cardiovascular care in patients with a history of cancer, but also suggested that these patients are less likely to receive drug-eluting stents (DESs) to treat coronary artery disease (CAD), out of concern for high bleeding risk and expectant need for cancer-directed surgery. Although characterized as a "safe" treatment strategy, in our opinion, it might not be optimal for all patients with CAD and a history of cancer.

Many of the clinical risk factors for cancer such as diabetes mellitus, smoking, and a chronic inflammatory state are also risk factors for coronary artery restenosis and thrombosis after stenting. The current generation of DES reduces the risk of restenosis and stent thrombosis as compared with bare-metal stents.[3] It was previously felt that the biggest disadvantage of DESs was the requirement of dual antiplatelet therapy (DAPT) for at least 12 months after stent placement. This interpretation of anticoagulant therapy resulted from the experience with first-generation DESs, in which it was inferred that DES stent failure was more likely because of inhibition of neointimal formation resulting in incomplete endothelialization.[4] However, data on the current generation of DES calls this interpretation of the pathophysiology into question.

A prespecified analysis from the Zatarolimus-Eluting Endeavour Sprint Stent in Uncertain DES Candidates (ZEUS) trial found that patients with high bleeding risk and those receiving stents that slowly eluted zotarolimus (an immunosuppressant) had a lower rate of stent thrombosis, myocardial infarction, and target vessel revascularization compared with those receiving bare-metal stents, despite shorter duration of

DAPT (15-60 days). Furthermore, rates of bleeding events did not differ between the 2 stent groups.[5]

Additional evidence is inferred in studies looking at patients with thoracic malignancies: Mediastinal radiotherapy decreases mortality and malignancy recurrence but is associated with a 7-fold increased risk of CAD. Surgical revascularization is often necessary but is associated with high perioperative complications due to unsuitability of the left internal mammary artery following irradiation. Bare-metal stents, in this population, have been associated with very high rates of in-stent restenosis. In contrast, the newer DESs have shown no difference in the rate of in-stent restenosis between irradiated and nonirradiated patients,[6] which makes them preferable in this population.

Although cancer patients may be considered at high risk for bleeding, this risk is not equivalent in all patients with a history of cancer. Cardiovascular disease in patients with cancer is complex, and treatment needs to be individualized. There is evidence to suggest that refraining from the use of DES in this rapidly expanding cohort can lead to higher major cardiovascular events, which can thwart the effectiveness of advancements in both fields. Given more current data demonstrating improved efficacy with DESs and short-duration DAPT, without an increase in bleeding risk, perhaps it is time to rethink our strategy in cancer patients who undergo percutaneous coronary intervention.

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In Reply I—A Differing Opinion on Primary Percutaneous Coronary Intervention in Patients Who Have Had Cancer: Stent Choice in Onco-cardiology Revisited

To the Editor: We sincerely welcome the letter by Ganatra et al[1] describing their concern regarding the use of bare-metal stents (BMSs) in patients with cancer. The authors raise important questions regarding the best strategy for percutaneous revascularization in this cohort.

It is important to consider 3 important factors before coronary revascularization in patients with cancer. First, patients with cancer may be at higher bleeding risk due to coagulopathy and the expected need for cancer-related surgeries. Second, cancer is associated with a prothrombotic state that may increase the risk for in-stent thrombosis. Third, many patients with cancer have limited life expectancy, which may compete with coronary events as the principle source of morbidity and mortality.

Thus, it is conceivable that BMSs may be preferable in patients with cancer because they are associated with lower risk of in-stent thrombosis, allowing for earlier interruption of dual antiplatelet therapy (DAPT). It is correct that BMS use is at the expense of increased risk of in-stent restenosis and need for target lesion revascularization; however, these are typically late events that are rare and many patients die from cancers before in-stent restenosis ensues.

The authors extrapolate data from the Zotarolimus-eluting Endeavor sprint stent in Uncertain DES candidates (ZEUS) trial, which showed that zotarolimus-eluting coronary stents were associated with decreased risk of 1-year major adverse cardiovascular events (death, myocardial infarction, or target vessel revascularization) when compared with BMSs, despite similarity in the duration of DAPT.[2] It is important to note, however, that out of 1606 patients enrolled in this trial, only 5.2% (84 of 1606) patients had cancer and only 19% (305 of 1606) had ST-elevation myocardial infarction (STEMI), thus limiting the generalizability of these data to all cancer patients with STEMI.

The emerging data on the safety of shorter periods of DAPT in drug-eluting stents (DESs) may make them more appropriate for use in patients with cancer. The 2016 update of the American College of Cardiology/American Heart Association guidelines on DAPT duration after coronary stenting now recommends 6 months of DAPT after DES placement in patients who have stable ischemic heart disease and 12 months