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CLINICAL CASE
Cardiac Catheterization and Defensive Medicine
Commentary by Crystal E. Brown, MD, and David R. Brush, MD

Mr. Damon, a 62-year-old man with known coronary artery disease and a long history of angina, came to see his cardiologist, Dr. Ross, with chest pain—again. Such complaints had been typical during Mr. Damon's clinic visits over the last two years. Each episode was brought on by physical exertion and, just as predictably, was relieved with rest and a nitroglycerin tablet. Previous stress tests and cardiac catheterizations had shown the presence of stable angina without major blockages or areas of ischemia. Dr. Ross did his usual evaluation of Mr. Damon and concluded that Mr. Damon was having his typical angina, needed no changes to his medications, and did not need invasive cardiovascular testing.

As he was about to send Mr. Damon home, he remembered a fellow cardiologist who, in a similar clinical situation, sent a patient home without a cardiac catheterization. That patient died shortly thereafter of a heart attack, and the patient's family attempted to sue the physician for malpractice. Dr. Ross's clinical judgment told him that further testing was unnecessary, but he was concerned that such judgment alone might not hold up in court. While he knew that many of his colleagues would agree with his clinical assessment, he also knew that others would order a catheterization to protect themselves from potential litigation. Dr. Ross was worried about the complication risk of feeding a catheter up through the femoral artery into the heart and injecting dye into the coronary arteries, and he also wondered about the added strain on Mr. Damon's finances.

Commentary
Physicians are said to practice defensive medicine when they pursue unnecessary diagnostic modalities, prescribe unneeded pharmacologic therapies, avoid high-risk procedures, or refuse to care for complicated patients in an attempt to avoid malpractice litigation [1]. Such practices are not uncommon [2, 3]. In a 2005 survey of Pennsylvania physicians practicing in specialties such as emergency medicine, surgery, radiology, and obstetrics, 93 percent of physicians stated that they "sometimes or often" practiced defensive medicine [4]. Approximately 59 percent reported ordering unnecessary diagnostic tests and one-third reported recommending clinically unwarranted invasive procedures. In a more recent national survey of medical and surgical physicians, 91 percent of respondents stated that they believed that physicians order more procedures and tests than indicated due to fear of litigation [1]. Surprisingly, physicians' individual litigation experiences do not appear to increase their likelihood of practicing defensive medicine; instead, a physician's behavior appears to be spurred by collective anxiety over malpractice

litigation in general [5, 6]. The financial burden of such practices is not inconsequential. It has been estimated that defensive medicine practices account for tens of billions of dollars a year in diagnostic and treatment expenditures and 5-9 percent of Medicare costs [6].

The practice of medicine requires that physicians distill a clinical decision from a complicated assortment of potential risks and benefits to the patient. While a physician ideally favors a decision that minimizes risks and maximizes benefits for the *patient*, sometimes potential risks and benefits to the *physician* can shift decision making towards the physician's personal aims. Such acts can warp a clinician's selection of treatment options, poison the process of informed consent, and harm patients.

Our vignette presents a physician, Dr. Ross, who is considering ordering an invasive study despite his clinical judgment that the procedure will not benefit the patient, Mr. Damon. Should Dr. Ross proceed, he would do so in violation of one of the core principles of medicine: physicians' moral obligation not to inflict harm upon others. The Hippocratic Oath is clear when it states: "I will use treatment to help the sick according to my ability and judgment, but I will never use it to injure or wrong them" [7]. This responsibility of nonmaleficence encompasses obligations to neither directly inflict harm nor impose risk [8]. To avoid negligence, the physician must ensure that any harms and risks are necessary and reasonable because they stand to substantially benefit the patient. Dr. Ross predicts that catheterization will not change Mr. Damon's current medical management or long-term outcome. While the proposed procedure may shield Dr. Ross from legal vulnerability and possibly provide financial compensation, this does not warrant subjecting the patient to bodily discomfort, possible emotional duress, financial responsibility for related costs, and the remote possibility of life-threatening complications. While this vignette focuses on an invasive procedure, noninvasive testing such as echocardiograms and computed tomography—and even blood tests—carry with them burdens and risks that must be justified by a corresponding direct or potential benefit to the patient.

Next, consider the impact of defensive medicine on informed consent. If Dr. Ross decides to order the catheterization, how will he explain his reasoning to Mr. Damon? Informed consent requires that the consenting person understand the potential risks and benefits of the proposed action. If the physician inaccurately plays up the benefit of the procedure, deceives the patient into believing that it is necessary, or inappropriately minimizes the potential risks, the patient's consent is invalid [8]. Such behavior on the part of the physician denies the patient his or her legal and moral rights to self-determination.

Not all defensive practices are wrong, however. In 1998, Kenneth de Ville observed that increased communication and interaction between the physician and patient are risk-free and of minimal cost to the physician and may enhance the patient-physician relationship [9] Clearly documenting the patient's involvement in the decision-making process, the physician's clinical reasoning, and the risks and benefits

communicated to the patient can provide additional legal protection for the physician. Physicians who emphasize patient education and involve the patient to a greater extent in the decision-making process can both improve the patient-physician relationship and, simultaneously, provide themselves better legal standing.

While this case features a scenario in which the physician has judged the procedure to be of no benefit to the patient, real-world clinicians confront substantially more complicated cases, in which medical decision making involves more uncertainty. When the balance of risks and benefits is more uncertain, consultation with other physicians is wise. Ultimately, if uncertainty cannot be resolved, physicians must disclose not only risks and benefits, but also their concerns, and work with the patient to come to a joint decision. Just as physicians have different levels of risk tolerance, patients are similarly varied. In these cases, it is the patient's view of the risk and benefits and his or her personal values that ultimately guide management, sometimes despite the clinician's preference.

The welfare and health of the patient should outweigh any financial, political, or legal concerns of the physician. Defensive medicine impinges upon a physician's duty to do no harm by placing the physician's self-preservation before the patient's well-being. The pervasive and palpable anxiety in the medical community leads one to expect that defensive practices will remain commonplace [4, 5]—but that does not make it right.

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