NOT RECOMMENDED FOR PUBLICATION
File Name: 17a0332n.06

Nos. 16-3105; 16-3427; 16-3578

FILED
Jun 13, 2017
DEBORAH S. HUNT, Clerk

UNITED STATES COURT OF APPEALS
FOR THE SIXTH CIRCUIT

UNITED STATES OF AMERICA, Plaintiff-Appellee, v. HAROLD PERSAUD, Defendant-Appellant.	)))))))))))	ON APPEAL FROM THE UNITED STATES DISTRICT COURT FOR THE NORTHERN DISTRICT OF OHIO

BEFORE: BOGGS, McKEAGUE, and GRIFFIN, Circuit Judges.

BOGGS, Circuit Judge. On August 20, 2014, defendant-appellant Harold Persaud, M.D. was named in a 16-count federal grand jury indictment in the Northern District of Ohio. He was charged with one count of health-care fraud, in violation of 18 U.S.C. § 1347, fourteen counts of making false statements relating to health-care matters, in violation of 18 U.S.C. § 1035, and one count of money laundering, in violation of 18 U.S.C. § 1957. The grand jury also returned a forfeiture finding, requiring Persaud to forfeit any and all property linked to the charges, including $343,634.67[1] seized from two bank accounts associated with Persaud and his wife.

The thrust of the government's charges was that Dr. Persaud, a cardiologist working in his own private practice in Westlake, Ohio, ordered unnecessary tests and systematically overestimated the degree of arterial blockage in his patients in order to justify costly

[1] This amount includes $93,446.25 seized from the account of Harold Persaud and $250,188.42 seized from an account belonging to his wife, Roberta Persaud.

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interventional procedures such as "stenting."[2] The government also accused Persaud of "upcoding" certain medical bills—that is, Persaud intentionally overreported the complexity of his patients' medical issues in order to maximize his reimbursement from Medicare and private insurers.

Persaud pleaded not guilty. In a nearly one-month jury trial, lasting from August 31, 2015, to September 28, 2015, the government presented 34 witnesses, including 11 physicians, eight patients, and four nurses. The defense relied on five witnesses, including an expert cardiologist, two referring physicians, and a coding expert. The jury ultimately convicted Persaud on all charges, except for one of the false-statement counts listed in the indictment. In a subsequent money-judgment hearing, the same jury returned special verdicts concluding that: (1) the $343,634.67 seized from the Persauds' bank accounts was forfeitable proceeds of Persaud's health-care fraud scheme; (2) the $250,188.42 seized from Persaud's wife's account was related to his money-laundering conviction; and (3) Persaud's scheme generated gross proceeds in the amount of $2,100,000.

The district court sentenced Persaud to 20 years of imprisonment, a $1,500 special assessment, and restitution. The district court later determined the outstanding restitution amount to be $5,486,857.03,[3] which consists of money damages to be paid to Persaud's patients, their private insurers, and the United States. Persaud filed separate appeals challenging his conviction and sentence, the forfeiture order, the restitution order, and the district court's order denying release pending the outcome of this appeal. The first three challenges have been

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[2] Stenting involves inserting a small mesh tube into arteries that have been weakened or narrowed by cardiovascular disease. The stent expands and supports the artery walls to permit blood to flow through the weakened arteries more easily.

[3] The district court determined that Persaud owed a total amount of $5,487,663.70, but that he had earned credit for certain restitution obligations that he had already satisfied.

consolidated in this appeal; another panel has already denied Persaud's request for release. The government has also filed a motion to strike portions of Persaud's briefs on appeal, arguing that they impermissibly relied upon evidence that was not admitted at trial.

For the following reasons, we affirm Persaud's convictions on all counts, his sentence, and the district court's restitution and forfeiture orders, and we dismiss the government's motion as moot.

I

A

Persaud's medical practice focused on the treatment of coronary artery disease ("CAD"). CAD involves the narrowing or blockage of the coronary arteries and is usually caused by age and the accumulation of cholesterol and fatty deposits on artery walls. When the narrowing of the artery becomes significant, it may begin to cause heart problems. The American College of Cardiology defines significant CAD as an artery where the blockage (referred to as stenosis) exceeds 70% of the artery's diameter. In the case of the left main coronary artery, however, the stenosis threshold for significant CAD is 50%. Although the definition of CAD incorporates these stenosis thresholds, another key determining factor in any CAD diagnosis is the patient's symptoms. Only when a patient reports symptoms of heart disease *and* stenosis levels above safe thresholds is a CAD diagnosis appropriate.

Properly diagnosing a patient's CAD can involve a variety of tests, each with advantages and disadvantages. Electrocardiograms ("EKG") and echocardiograms ("ECHO") are relatively low-risk tests that use electric signals and ultrasound waves to give the diagnosing doctor an idea of the patient's heart rate and chamber integrity. Nuclear Stress Tests ("NST") involve injecting a patient with a radioactive material, subjecting the patient to cardiovascular exercise, and then

observing the blood flow through the heart while under stress and at rest. Because this procedure involves injecting the patient with radioactive materials and strenuous exercise, NSTs put a patient at a greater risk of harm than an EKG or an ECHO.

If these tests reveal that the heart is receiving insufficient blood flow and a patient is reporting symptoms of heart disease, then additional invasive imaging procedures may be prescribed to determine whether a patient is experiencing arterial stenosis. These tests also involve risks and generally are not performed except when a patient reports symptoms of CAD and undergoes an NST that indicates blood-flow deficiencies. The most common invasive imaging procedure is a cardiac catheterization, in which a doctor uses a catheter inserted in the patient's blood vessels to inject contrast material into the patient's major arteries. Subsequent x-rays of the patient's vessels, called angiograms, detect the contrast material and permit the diagnosing doctor to identify potential stenosis. If the angiogram is inconclusive, a doctor may order an intra-vascular ultrasound ("IVUS") to obtain more detailed images of a patient's blood-vessel walls. An IVUS is generally considered to be a riskier procedure than an angiogram, and doctors typically reserve the test for patients whose angiograms indicate potentially troubling stenosis levels (between 50% and 70%) or to monitor the placement of a stent.

Once a doctor diagnoses dangerous arterial blockage, he may then prescribe one of several invasive procedures depending upon the severity of the patient's condition. One of these procedures is called percutaneous coronary intervention ("PCI"), which involves the insertion of a small wire-mesh stent into the obstructed artery. Although the insertion of a stent may improve a patient's blood flow and reduce his CAD symptoms, it cannot cure the underlying cause of CAD or prevent its progression. The insertion of a stent is also permanent; once placed, it cannot be removed. Moreover, the insertion of a stent can cause additional medical

complications, including blood clotting (requiring the prescription of blood-thinning medications) and restenosis, which involves the narrowing of a previously stented artery.

Coronary bypass surgery is an even more invasive option and is typically reserved for only the most severe cases of CAD. Bypass surgery involves grafting an artery from another place in a patient's body and using it to divert blood flow around a severely blocked artery in the heart. Risks include complications from general anesthesia, stroke, and even death. Patients generally take several months to recover from bypass surgery and are required to undergo continued follow-up visits with a cardiologist for life.

B

Persaud's alleged scheme involved systemically overscheduling, over-testing, over-treating, and over-billing his patients. At each step in the medical process, from patient intake to the prescription of treatment, the government alleges Persaud improperly cut corners and intentionally overestimated the severity of his patients' conditions in order to prescribe unnecessary treatment and increase profit.

For Persaud's scheme to work, he first had to maximize his intake of patients. According to the government's witnesses, he did this by routinely overscheduling patients and falsifying the amount of time he spent with them on their medical records. Witnesses testified that Persaud scheduled two patients for every fifteen-minute block on his calendar and routinely saw upwards of 20 patients between 9 a.m. and 11:15 a.m. on any given office day. Even though Persaud spent an average of five to ten minutes in the exam room with each patient, he would indicate that he spent thirty to thirty-five minutes with each patient in the medical records. He also allegedly pressured his patients' spouses to undergo medical tests, regardless of whether they actually reported symptoms of heart disease.

For each of these office visits, Persaud also allegedly engaged in the practice of "upcoding" his patients' medical bills. The American Medical Association publishes an annual guide that assigns codes, called current procedural terminology ("CPT"), to the various procedures that a medical professional can perform. Doctors and insurance companies use these CPT codes to document medical services for insurance reimbursement. Persaud's office used four billing codes, numbered consecutively from 99212 to 99215, to document patient office visits. The codes were arranged in terms of the complexity of the visit, with 99212 indicating the least complex office visit and 99215 indicating the most complex office visit. Insurers reimbursed doctors accordingly, paying $41.06 for the least complex office visit and $136.42 for the most complex office visit. Even though Persaud only saw his patients for an average of five to ten minutes per visit, Persaud used the highest CPT code for his patients' visits the vast majority of the time. Persaud personally selected the CPT code for each of his patients and did not permit his staff to override his selection. When Persaud's billing practices attracted the attention of health-insurance auditors,[4] he began to edit the existing patient files that the auditors had selected for review, adding additional notes and observations to support his inflated CPT codes.

According to the government's witnesses, Persaud also routinely required his patients to undergo unnecessary NSTs, a procedure made all the more profitable by the fact that Persaud owned an NST machine.[5] Despite the fact that annual NSTs are frowned upon as unnecessary and excessive,[6] Persaud subjected his patients to yearly NSTs. To justify the tests to his patients'

[4] Four major health-insurance providers—Humana, Anthem, Medicare, and Optum—conducted audits or post-payment reviews on Persaud because of his abnormal CPT billings.

[5] This permitted Persaud to bill the insurance company both for the use of the machine and for interpreting the results. Had Persaud instead performed the test at the hospital, he could only bill for the latter.

[6] Experts at trial testified that the medical community had rejected annual NSTs by 2005.

insurers, he would use a pre-populated template form that assigned his patients the same litany of vague symptoms: "chest pain, possible angina, abnormal ECG, arrhythmia, CAD, [and] dyspnea." He also actively recruited his patients' spouses to undergo NSTs, regardless of whether they reported symptoms of CAD. On days when he conducted NSTs, he would try and process 10 in a single day, soliciting replacement patients from the adjoining hospital if one of his scheduled patients canceled. In some instances, Persaud used wheelchair-assisted replacement patients in treadmill-based NSTs, even though medical protocol requires patients who need assistance walking to undergo less physically strenuous chemical tests. Even when NSTs were prescribed appropriately, Persaud insisted on using the cheapest radioactive isotopes, refused to pay for an additional stress technician to administer the test, and rushed his patients through the procedure.

Persaud then allegedly falsified his patients' NST results in order to convince them to undergo additional catheterization testing at local hospitals. These tests produced angiograms of the patients' arteries, which gave a rough depiction of the extent of any arterial blockage. Although interpreting angiograms is an inexact science subject to reasonable differences in professional opinion, most cardiologists who interpret the same angiogram will indicate similar levels of blockage. An expert at Persaud's trial testified that the inter-observer variability between cardiologists reviewing the same angiogram will typically be within 10 percentage points of one another. In Persaud's cases, however, the inter-observer variability between Persaud and the reviewing cardiologists generally exceeded 10 percentage points, often by a

large margin.[7] In some instances, Persaud allegedly overestimated the amount of stenosis by over 40 or 50 percentage points and used his diagnosis to justify additional invasive procedures.

Occasionally, the angiograms would not indicate a visually obvious blockage. When this was the case, Persaud allegedly prescribed additional IVUS tests in order to fabricate higher stenosis levels. Experts at Persaud's trial testified that, as an initial matter, Persaud's use of IVUS testing on patients with visually clear angiograms was suspect because IVUS tests are intended only to be used on "close call" blockages—i.e., where the angiogram indicates potentially troubling stenosis levels. Moreover, when he did conduct IVUS tests, he frequently manipulated the results in order to produce stenosis levels high enough to justify additional interventional treatment.[8]

These additional treatments, in turn, permitted Persaud to accumulate even greater profits because they required his patients to undergo regular follow-up visits and tests. Both stent patients and bypass patients require additional treatments. Bypass patients, in particular, require frequent follow-up visits. In at least one instance, Persaud allegedly overestimated a patient's stenosis levels in order to refer him to bypass surgery, resulting in 7 billable office visits involving that patient in a single year.

C

Investigation into Persaud's medical practice began in 2012, when Persaud recommended that one of his patients undergo bypass surgery. Dr. John Coletta, chief cardiologist at St. John Medical Center, was assigned to monitor the patient until surgery could be scheduled. Coletta

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[7] Persaud disputes this, arguing that the cardiologists who testified at his trial only had access to his angiograms while his stenosis diagnoses were based on more accurate IVUS tests. This issue will be addressed in greater detail in Part II.B–C.

[8] IVUS measures stenosis in a blood vessel by calculating the dimensions of the vessel walls and any blockages within. The cardiologist, however, retains discretion over how the machine calculates the dimensions of the blood vessel. Persaud allegedly "re-drew" the lines representing his patients' blood vessel walls in order to inflate their levels of stenosis.

and catheterization-lab nurse Cathie Parsh noticed that Persaud's records severely overestimated the extent of the patient's arterial blockage. The patient's angiogram, for example, indicated stenosis levels of 30%, well below the threshold for a serious interventional procedure like bypass surgery. The patient's IVUS images appeared not to depict a constricted artery, but rather measurements of the inside of the guide catheter used to set the device in place. Even the symptoms listed in the patient's medical records did not match testimony by the patient, who told Colleta that he was experiencing no chest pain and had no problems engaging in moderate physical activity. Subsequent testing led Coletta to conclude that there was no reason for the patient to undergo bypass surgery.

Spurred by this discovery, Coletta spearheaded a review of all 12 of the IVUS tests that Persaud performed at St. John Medical Center on patients during the 3 months prior to the falsely referred bypass patient. Of the 11 instances where Coletta was able to obtain IVUS images from Persaud's tests, he determined that 7 of those cases involved measurements of the guide catheter rather than the artery. When Coletta confronted Persaud, he resisted Coletta's line of questioning and refused to explain why his IVUS images improperly measured the guide catheter.

Persaud's reaction to Coletta's investigation led the board at St. John Medical Center to collect more records from Persaud's stent patients—some 65 patient records in total—and send them to Dr. Barry George at Ohio State University for further analysis. Dr. George concluded that not only did Persaud misinterpret the IVUS images in each one of the 65 cases sent for analysis, but that 43 of the 65 stent procedures were completely unnecessary. The hospital then sent additional angiogram film on 190 of Persaud's stent patients to Dr. Hiram Bezerra at University Hospitals Case Medical Center in Cleveland, Ohio, who concluded that 174 of the 190 stents Persaud inserted were placed in blood vessels with less than 70% stenosis—the

threshold at which stenting is considered medically appropriate. Other hospitals associated with Persaud also began reviewing his patients' files and uncovered similar instances of unnecessary medical procedures.[9]

Soon thereafter, St. John Medical Center revoked Persaud's practicing privilege and sent letters to his patients informing them that they may have received unnecessary stents. When a local newspaper picked up the story on August 31, 2012, federal investigators began to look into Persaud's medical practice for potential fraud. Significantly, on the same day that the newspaper ran the story, Persaud transferred $250,000 from his business account in order to open an account in his wife's name at another local bank. On October 12, 2012, federal law enforcement obtained and executed a search warrant for Persaud's office in order to secure patient records. Law-enforcement agents also served subpoenas on Persaud for additional patient files, several of which Persaud claimed not to have, but later disclosed to his patients upon their request.

As the investigation proceeded, the government hired several experts to review the details of Persaud's scheme. Dr. Ian Gilchrist, an interventional cardiologist, examined Persaud's hospital files, angiograms, and IVUS images. He reviewed a sample of 34 of Persaud's stent patients and found all of the procedures to be medically unnecessary. He further chose 10 of the original 34 samples as examples of grossly problematic conduct, and he ensured that the 10 samples chosen were taken from all three hospitals where Persaud practiced.[10] Gilchrist concluded that the 10-patient sample included 14 medically unnecessary stents (7 of which were inserted in different areas than those that Persaud diagnosed as problematic), 13 unnecessary

[9] Southwest General sent its records to an external cardiologist, who found that 18 of the 87 stents he reviewed were medically unnecessary. He also found that some of Persaud's IVUS measurements were improper. Fairview Hospital also conducted a review of Persaud's patients and found that 51 of Persaud's 147 stent patients received medically unnecessary stents and that for an additional 45 of those patients, the necessity of the procedure was uncertain.

[10] The 10 patients chosen were later listed in Persaud's indictment as victims of his alleged scheme.

aortograms and angiograms, and 7 unnecessary catheterizations. Dr. Robert Biederman reviewed Persaud's NST practice, concluding that 16 of the 21 NSTs that were performed on Gilchrist's 10-patient sample were medically unnecessary. Biederman also took issue with Persaud's practice of prescribing yearly NSTs. Sonda Kunzi examined Persaud's billing practice using the same 10-patient sample relied upon by Gilchrist and Biederman. Kunzi determined that the 10 patients resulted in 294 billable encounters with Persaud, *of which each and every encounter was overbilled*. All of these experts testified at Persaud's trial.

D

Based on the government's investigation, a federal grand jury returned a 16-count indictment, charging Persaud with one count of health-care fraud, fourteen counts of making false statements relating to health-care matters, and one count of money laundering (on the basis of Persaud's transfer of funds to his wife). The grand jury also concluded that Persaud, if found guilty of the charges, was also required to forfeit any proceedings of the fraud.

Persaud's trial, which lasted nearly one month, involved 39 witnesses, including 14 physicians, eight patients, four nurses, and two coding experts. After hearing the evidence, the jury convicted Persaud on all counts, save one of the false-statement charges. The same jury later returned a special money-judgment verdict, concluding that: (1) the $343,634.67 seized from the Persauds' bank accounts was forfeitable proceeds of Persaud's health-care fraud scheme; (2) the $250,188.42 seized from Persaud's wife's account was involved in his money-laundering conviction; and (3) Persaud's scheme generated gross proceeds in the amount of $2,100,000.

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amount to be $5,486,857.03, which consists of money damages to be paid to Persaud's patients, their private insurers, and the United States. Persaud filed separate appeals challenging his conviction and sentence, the forfeiture order, the restitution order, and the district court's order denying release pending the outcome of this appeal. The first three challenges have been consolidated in this appeal; another panel has already denied Persaud's request for release. The government also filed a motion to strike portions of Persuad's brief on appeal, arguing that Persaud impermissibly relied on evidence that was not admitted at trial. This opinion resolves both Persaud's consolidated appeal and the government's motion.

II

Persaud argues that the government presented insufficient evidence to sustain his convictions for health-care fraud, making false statements relating to health-care matters, and money laundering. An appellant challenging his conviction on sufficiency-of-the-evidence grounds faces a high bar—Persaud's conviction must be upheld if, "after viewing the evidence in the light most favorable to the prosecution, *any* rational trier of fact could have found the essential elements of the crime beyond a reasonable doubt." *United States v. Warshak*, 631 F.3d 266, 308 (6th Cir. 2010) (quoting *Jackson v. Virginia*, 443 U.S. 307, 319 (1979)). Consequently, "we will reverse a judgment for insufficiency of the evidence only if, viewing the record as a whole, the judgment is not supported by substantial and competent evidence." *United States v. Blakeney*, 942 F.2d 1001, 1010 (6th Cir. 1991) (citation omitted).

Persaud's conviction for health-care fraud was based upon his scheme in its entirety, from false diagnosis to the unnecessary stenting of patients. His convictions for making false statements, however, rely exclusively on the alleged inflation of particular patients' stenosis

levels. Lastly, his money-laundering conviction requires both that his medical practice be fraudulent and that he transferred the $250,000 check, as proceeds of that fraud, to his wife.

A

To commit health-care fraud, one must "knowingly and willfully execute[], or attempt[] to execute, a scheme or artifice to defraud any health care benefit program" or fraudulently obtain "any of the money or property owned by, or under the custody or control of, any health care benefit program in connection with the delivery of or payment for health care benefits, items, or services." 18 U.S.C. § 1347. A conviction under this statute requires that the government prove beyond a reasonable doubt that the defendant "(1) knowingly devised a scheme or artifice to defraud a health care benefit program in connection with the delivery of or payment for health care benefits, items or services; (2) executed or attempted to execute this scheme or artifice to defraud; and (3) acted with intent to defraud." *United States v. Agbebiyi*, 575 F. App'x 624, 634 (6th Cir. 2014) (quoting *United States v. Martinez*, 588 F.3d 301, 314 (6th Cir. 2009)). Proving fraudulent intent does not require direct evidence. Rather, "a jury may consider circumstantial evidence and infer intent from evidence of efforts to conceal the unlawful activity, from misrepresentations, from proof of knowledge, and from profits." *Ibid.* (citing *United States v. Davis*, 490 F.3d 541, 549 (6th Cir. 2007)).

The thrust of Persaud's argument on appeal is that he was simply an over-protective cardiologist who is guilty of nothing more than relying on outdated practice methods in treating his patients. The government's experts, Persaud argues, are unfairly second-guessing his reasonable decisions with the benefit of hindsight and fail to "confront the realities and exigencies of clinical practice."

The problem with Persaud's approach, however, is that he is effectively asking this court to re-weigh the expert testimony that was presented at trial. Persaud is not arguing that the government failed to present sufficient expert testimony to prove the required elements of health-care fraud. Rather, Persaud is arguing that the government's expert witnesses were simply wrong, either because they relied upon incomplete information or made incorrect assumptions about the standards of professional medical care. But the reliability and believability of expert testimony, once that testimony has been properly admitted,[11] is exclusively for the jury to decide. This court has long held the view that "[t]he weight and credibility of the testimony of [a party's] expert witnesses were for the jury." *O'Donnell v. Geneva Metal Wheel Co.*, 183 F.2d 733, 737 (6th Cir. 1950); *see also Bathory v. Procter & Gamble Distrib. Co.*, 306 F.2d 22, 25 (6th Cir. 1962) ("It was for the jury, however, to weigh the evidence, to determine the credibility of these [expert] witnesses and to cull the truth out of these seeming contradictions."); *Dickerson v. Shepard Warner Elevator Co.*, 287 F.2d 255, 259 (6th Cir. 1961) ("The weight given to lay and expert testimony and the credibility of such witnesses was for the jury to determine."). Our task on review is to determine whether any rational trier of fact, viewing the evidence presented at trial in its entirety, could find the defendant guilty beyond a reasonable doubt of all of the elements of the crime for which he was convicted. It cannot be the case that a juror acts irrationally as a matter of law when he credits the testimony of one expert witness over another.

Stated differently, Persaud's challenge fails because so much of his appeal depends on dismantling the methodology of the government's expert witnesses. Where he attempts to introduce new evidence or advance new arguments on appeal, moreover, he improperly asks this court to overturn his conviction based on evidence that was never placed before the jury. *See*

[11] Persaud is not arguing that the admission of the testimony of the government's expert witnesses violated *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), which establishes standards for the admissibility of expert-witness testimony in federal court.

United States v. Ovalle, 136 F.3d 1092, 1108 n.17 (6th Cir. 1998) ("[I]t is a rule of long standing in this court that we will not reverse on grounds not raised in the trial court." (citation omitted)); *Blakeney*, 942 F.2d at 1010 (explaining that appellate review for sufficiency of the evidence is limited to "viewing the record as a whole" (citation omitted)). To make this point clear, we will address each of the arguments Persaud raises in his appeal and briefly explain why they fail to undermine the sufficiency of his convictions.

He first challenges the government's allegation that he systematically over-tested his patients and falsified the results of those tests in order to support additional interventional treatment. He begins by attacking the government's expert-witness testimony regarding NSTs, arguing that current NST practice standards—i.e., those that forbid annual NSTs on cardiac patients—are a recent development in medicine. Thus, he argues, his practice of annual testing is, at best, obsolete and not a sign of health-care fraud. He then proceeds patient by patient through the 10-patient sample and explains why, with respect to the 9 patients Dr. Biederman identified as having been prescribed 16 unnecessary NSTs, other evidence contained within each patient's record justified the procedures. Although Persaud presents alternative reasons behind his reliance on NST testing, these reasons were never presented to the jury at trial. Moreover, the government presented a wealth of uncontested evidence that supports a conviction of health-care fraud. Persaud does not challenge, for example, the fact that he owned an NST machine and thus could profit more from its use, the fact that he tried to process 10 NST patients per day and frequently solicited replacement patients to fill that quota, the fact that he used wheelchair-bound patients in treadmill-based NSTs even though chemical tests were more appropriate for patients of their condition, or the fact that he used the cheapest radioactive isotopes and rushed his patients through the procedure. *See supra* at Part I.B. This evidence, taken in conjunction with

the lengthy testimony of the government's expert witnesses, could support a rational juror's conclusion that Persaud's NST practice constituted fraud.

Persaud then challenges the government's allegations with respect to his angiographic-testing practice—specifically, that Persaud improperly prescribed additional angiograms for patients whose NSTs were normal. Here, Persaud does not address each of his patients' cases individually, instead choosing to discuss his catheterization philosophy more broadly. Persaud emphasizes the fact that some of the government's experts weren't privy to his patients' long-term medical records and that angiographic testing can sometimes be appropriate where a patient discloses a family history of heart disease. Problematically, Persaud can only point to one patient, identified as RE, whose family history actually supports a prescription of further angiographic testing. The government, meanwhile, points to a range of cases in which Persaud conducted angiographic tests and inserted stents in areas of the heart that were *inconsistent with* the areas where the NSTs allegedly indicated problems. Persaud's argument on appeal is nothing more than an attack upon the reliability of the government's expert-witness testimony. A rational juror could infer fraud from the government's expert testimony and conclude that Persaud's emphasis on family history was nothing more than post-hoc rationalization.

Persaud next addresses his practice of prescribing additional IVUS tests, which he raises twice in his brief. When he first addresses IVUS testing, he emphasizes his over-protective testing philosophy rather than individual patient cases. Although he points to one patient—again, the patient identified as RE—as an example of a case where the government's witnesses at least partially agreed with his decision to prescribe additional IVUS testing, the gist of Persaud's argument is that the decision to recommend additional testing is inherently subjective. Because he knew the details of his patients' lives, Persaud argues, he was better positioned to determine

whether their symptoms merited further testing. The government, however, produced expert witnesses who testified at trial that IVUS tests were designed to be used as a tie-breaking tool, intended only to clarify the extent of arterial blockage where the angiogram suggested potentially troubling stenosis levels (usually in the 50 to 70% range). A rational factfinder is entitled to rely on the government's expert testimony in concluding that Persaud's use of IVUS testing on patients whose angiograms revealed little or no arterial blockage violated this medical norm and was indicative of health-care fraud.

Persaud also argues that the government's experts lacked sufficient information to analyze properly his use of the IVUS tests. This argument focuses on the allegation that the majority of the images he took with the IVUS machine were useless because they depicted the inside of the guide catheter rather than the patient's arteries. He emphasizes that the experts only had access to the small number of images that were actually saved and preserved during the IVUS exam. Such a small sample size, he argues, is insufficient to determine whether his use of the machine was improper. He specifically points out that, in a small number of cases, the government's own experts disagreed as to whether a recorded IVUS image was of the guide catheter or of the patient's arteries. He also argues that, contrary to some of the evidence that was presented at trial, he was not responsible for what images were and were not recorded; rather, that responsibility fell to the IVUS technician.[12] Again, Persaud's arguments effectively ask this court to do what it cannot do: "conceptualize our role as that of a jury, deciding the case anew." *Davis*, 490 F.3d 541. The jury, not this court, is intended to weigh the import of expert testimony and balance it against the weight of the defense's evidence. Our task is merely to

[12] As Persaud notes, there is some dispute here. One catheterization nurse testified at trial that Persaud only used the "sled method" to conduct an IVUS, which would mean that Persaud would have been the sole person responsible for determining when the "sled" was recording images. On cross-examination, however, she also admitted that Persaud occasionally used an alternative method, in which the operating technician held that responsibility.

determine whether a rational jury could conclude, based on the record *that was presented before the jury*, that Persaud's use of IVUS is indicative of health-care fraud. That the jury believed the government's experts over the defendant's experts is the jury's prerogative, not grounds to overturn the jury's decision.

Persaud then moves on to address allegations that he inserted unnecessary stents in his patients. Here, as with his arguments regarding IVUS testing, his approach is highly specific, objecting to individual experts' testimony and the evidence they presented. He makes two general arguments against the stenting allegations: (1) that the government's 70% stenosis threshold is an inaccurate oversimplification of existing medical practice, and (2) that the government's experts rendered conclusions about the appropriateness of his stenting practices based on incomplete or wrong information. Neither argument has merit.

The government introduced numerous witnesses who testified that 70% was the generally accepted threshold for arterial intervention procedures such as stenting. Some, as Persaud points out in his appeal, did testify that the 70% figure was a general guideline and that stent placement can be appropriate at lower levels of stenosis. The jury nonetheless had ample evidence to conclude that 70% was a generally accepted threshold for cardiac intervention and that, even if lower levels of stenosis might on occasion merit stenting, Persaud's practice of routine stenting amounted to health-care fraud.

The government also introduced several experts who testified that Persaud's stenting was inappropriate because of the level of stenosis recorded *by angiogram*. Persaud argues on appeal that judging the appropriateness of a stent insert by angiogram introduces "systematic error" because IVUS tests will routinely report a higher level of stenosis than an angiogram, and Persaud used IVUS tests to determine whether to place a stent. Ignoring the fact that one of the

many allegations included in Persaud's indictment is that he intentionally overestimated stenosis levels in his IVUS tests, Persaud's argument fails because he is yet again effectively asking this court to impermissibly re-weigh his experts over those of the government. The credibility of the government's expert testimony, the admissibility of which is not at issue in this appeal, cannot be attacked in a sufficiency-of-the-evidence challenge, which asks whether a rational jury could rely on the expert's testimony in concluding that Persaud is guilty beyond a reasonable doubt.

Lastly, Persaud challenges the government's expert who testified that Persaud intentionally "upcoded" his medical bills. Here, as with the other challenges he raises, Persaud attacks only the methodology of the government's expert witness, arguing that she relied upon incomplete information. The jury had ample opportunity to hear from both parties' expert witnesses during trial. Simply because they favored the government expert's account over the account of Persaud's expert does not undermine the evidentiary basis of the jury's verdict.

From Persaud's NST testing scheme through the "upcoding" of his patients' medical bills, the government presented sufficient evidence to permit a rational factfinder to find Persaud guilty beyond a reasonable doubt of all of the elements of health-care fraud. Therefore, we affirm Persaud's conviction on this count.

C

18 U.S.C. § 1035 forbids the making of any "materially false, fictitious, or fraudulent statements or representations . . . in connection with the delivery of or payment for health care benefits, items, or services." To establish guilt, the government must prove that the defendant made these false statements knowingly and willfully. *See United States v. Hunt*, 521 F.3d 636, 648 (6th Cir. 2008). The false statements at issue in this case are Persaud's representations of

specific patients' stenosis levels, which the government alleges were inflated for the purpose of justifying additional interventional procedures.

Here, just as with his arguments regarding his fraud conviction, Persaud attacks the methodology of the government's experts. Specifically, he attacks the experts' findings that his diagnosis of his patients' stenosis levels fell outside of the standard inter-observer variability range of 10 percentage points. He argues that the government's witnesses improperly compared Persaud's stenosis diagnoses, which were based on IVUS images, with expert diagnoses that were based on his patients' angiogram images. Since IVUS tests yield more precise measurements of a patient's stenosis levels, Persaud argues, any comparison between his IVUS findings and the angiogram images is akin to comparing apples and oranges. one does compare expert findings on the same test, Persaud argues that his findings fall well within the standard range of inter-observer variability.

Problematically for Persaud, however, the government's witnesses presented a different interpretation of the data to the jury. To begin with, as many of the government's witnesses pointed out, the mere fact that Persaud prescribed additional IVUS tests for patients whose angiograms revealed only minimal stenosis was itself indicative of fraudulent activity. In addition, the government's experts testified that, regardless of Persaud's angiogram readings, his IVUS readings were inherently fraudulent because he intentionally interchanged *percent diameter stenosis* with *percent area stenosis* in order to inflate his patients' stenosis values.[13] Because a rational factfinder may rely upon admitted expert testimony at trial, the vast majority

[13] Percent diameter stenosis represents the extent of a patient's arterial blockage as measured by the diameter of the target artery, while percent area stenosis represents the extent of a patient's arterial blockage as measured by the area of the target artery. Because area is a function of the radius squared and multiplied by pi, percent area stenosis will always return a higher percentage value than percent diameter stenosis, even when measuring the same level of blockage. As one government expert testified, the different measurements are "two different kettles of fish."

of which implicated Persaud in a scheme to falsify his patients' stenosis levels, he has failed to show that his false-statement convictions are not supported by evidence on the record. Therefore, we affirm Persaud's false-statement convictions as well.

D

Lastly, Persaud contests his money-laundering conviction, which is governed by 18 U.S.C. § 1957. In order to be found guilty of money laundering, "a defendant must (1) knowingly engage, or attempt to engage in a monetary transaction, (2) know that the funds involved in the transaction are criminally derived, (3) use criminally derived funds in excess of $10,000 in the transaction, and (4) use funds 'derived from specified unlawful activity.'" *United States v. Young*, 266 F.3d 468, 476 (6th Cir. 2001) (quoting 18 U.S.C. § 1957). Persaud's money-laundering conviction stems from a $250,000 transfer that Persaud made from his bank account to a bank account belonging to his wife on the day that a local newspaper published an article about ongoing hospital investigations into his cardiology practice.

There is no question that the $250,000 transfer exceeds the amount threshold in the money-laundering statute. The only question is whether Persaud knew that the funds were derived from specific criminal activity. He argues on appeal that, since he did not commit health-care fraud, he cannot be guilty of money laundering. Because we conclude that Persaud is guilty of health-care fraud, he is also guilty of money laundering. Therefore, we affirm Persaud's conviction on this count as well.

III

Persaud also challenged his sentence and the district court's restitution and forfeiture orders in separate cases that were consolidated with this appeal. In his appellate brief, however, Persaud failed to raise substantive arguments on any of these points, referring only to his lengthy

sentence in passing in the last paragraph of his brief. Our case law makes clear that "[i]t is not sufficient for a party to mention a possible argument in the most skeletal way, leaving the court to . . . put flesh on its bones." *McPherson v. Kelsey*, 125 F.3d 989, 995–96 (6th Cir. 1997) (alteration in original) (quoting *Citizens Awareness Network, Inc. v. United States Nuclear Regulatory Comm'n*, 59 F.3d 284, 293–94 (1st Cir. 1995)). Because "[i]ssues adverted to in a perfunctory manner, unaccompanied by some effort at developed argumentation, are deemed waived," *ibid.*, Persaud has forfeited any argument pertaining to his sentence or the district court's restitution and forfeiture orders.

IV

Persaud raises several thoughtful evidentiary arguments in his appeal. All of these issues, however, were fairly presented to the jury at trial. Persaud had every opportunity to expose the weaknesses of the government's experts through cross-examination, and by all accounts did so. The jury was entitled to accept the view of the government's experts over those of Persaud's experts. Because a rational factfinder may rely upon admitted expert testimony in determining a defendant's guilt, Persaud has not met his burden of demonstrating that his conviction was not supported by sufficient evidence. We therefore AFFIRM Persaud's convictions on all counts, his sentence, and the district court's restitution and forfeiture orders, and we DISMISS the government's motion to strike as moot.