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Editorial

Why Do Our Systems Still Reward the Wrong Decisions in Interventional Cardiology?

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Interventional cardiology now has stronger evidence to guide clinical decision-making. Over the past three decades, randomized trials, appropriate use criteria, and practice guidelines have clarified what once sparked considerable debate: not every coronary stenosis requires mechanical treatment. For many patients with stable ischemic heart disease, optimal medical therapy yields outcomes comparable to those of revascularization. The greatest value of percutaneous coronary intervention (PCI) lies in relieving symptoms, improving functional status, and treating carefully selected high-risk anatomy or acute coronary syndromes [1,2]. The most important decision in interventional cardiology often occurs before the guidewire ever touches the lesion. Meanwhile, determining whether PCI is indicated remains a core measure of quality.

However, an uncomfortable paradox has emerged. As our science has become more precise, the systems used to evaluate physicians have remained remarkably crude. Most quality programs continue to define performance using procedural volume, short-term mortality, bleeding complications, readmissions, and other outcomes that are relatively easy to extract from registries and electronic health records [3]. These measures are not unimportant; they have improved transparency and encouraged attention to safety. However, they capture only a small portion of what constitutes good clinical care, revealing little about whether the decision to perform PCI was appropriate, whether the patient experienced meaningful relief, or whether daily life improved months after discharge.

Every measurement system shapes behavior. Physicians respond to the standards by which they are judged; hospitals respond to the metrics by which they are compared. Health systems respond to the financial incentives embedded in those metrics. This pattern extends well beyond medicine. In education, schools teach to standardized tests when scores determine funding and rankings. In business, companies optimize for the metrics investors track. Healthcare is no different. Once procedural counts and short-term outcomes become the dominant indicators of success, they inevitably shape clinical decisions. That should concern all of us.

The central purpose of quality measurement is not to produce attractive dashboards or satisfy regulatory agencies. Its purpose is to improve patient care. Metrics are valuable only insofar as they promote better clinical decisions and outcomes. When they fail to do so, or worse, when they encourage behavior that conflicts with the interests of the patients, they deserve careful reexamination.

One of the great successes of modern cardiology has been recognizing that clinical judgment cannot be replaced by anatomy alone. A coronary stenosis does not automatically justify PCI. Decisions increasingly incorporate symptoms, ischemic burden, medical therapy, physiological assessment, patient preferences, frailty, comorbidity, and life expectancy. Appropriate patient selection has become integral to high-quality care [1].

Curiously, that sophistication has not been incorporated into how physician performance is evaluated. Administrative systems still equate procedural activity with productivity, despite growing evidence that appropriate patient selection is a fundamental component of high-quality care. An interventional cardiologist who thoughtfully recommends intensive medical therapy rather than PCI for a patient unlikely to benefit receives little recognition for preventing an unnecessary procedure. The decision may reflect exemplary judgment, yet it is absent from nearly every dashboard. By contrast, procedural volume is immediately visible, easily counted, and often interpreted as a measure of productivity. The implicit message is difficult to ignore: performing procedures is measurable; avoiding unnecessary procedures is largely invisible.

The result is a subtle but important disconnect. Clinical science increasingly rewards thoughtful selection, while administrative systems continue to reward activity. This does not imply that physicians consciously place institutional expectations above patient welfare. The overwhelming majority strive to make decisions they believe are in the best interests of the patients; nevertheless, no physician practices in isolation. The recent change in policy by the Society for Cardiovascular Angiography & Interventions (SCAI) to recommend no volume minimum as a quality measure for recertification is a formal recognition that quality metrics must include an evaluation of case selection and outcomes, not just procedural volume. Every organization

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sets expectations for efficiency, throughput, and reported outcomes, and those expectations inevitably influence behavior in gradual, unintended ways.

Public reporting of procedural mortality has increased transparency; however, it has also raised concerns that operators may become reluctant to undertake the highest-risk cases when outcomes are judged without adequate adjustment for patient complexity. Financial incentives intended to reward efficiency sometimes encourage greater procedural throughput rather than thoughtful case selection.

The problem is not measurement itself. Measurement is indispensable. The problem arises when readily available data replace meaningful assessments of clinical value. Procedural volume illustrates the issue well. Experience matters. One study has demonstrated relationships between operator volume and technical proficiency, particularly for complex interventions. Therefore, minimum procedural thresholds play an important role in maintaining competency [4]. However, competency and productivity are not synonymous. Once minimum standards become aspirational targets, volume assumes a significance it was never intended to have. The number of procedures becomes a surrogate for professional value, despite telling us little about whether those procedures were necessary or beneficial.

The same limitation applies to short-term outcomes. Thirty-day mortality, bleeding, vascular complications, and readmissions are appropriate markers of procedural safety, but they are incomplete measures of procedural success. Patients do not seek treatment merely to survive thirty days. They seek relief from angina, restored physical activity, preserved independence, and confidence that treatment was genuinely necessary. These outcomes are more difficult to measure, yet they are far closer to the reasons patients consent to intervention in the first place [5]. As our understanding of coronary disease has evolved, our definition of quality must evolve with it. Thus, measuring what is easiest is no longer sufficient.

The answer is not to abandon public accountability. The solution is not less measurement, but better measurement. The question is whether we are measuring the aspects of care patients value most and whether our metrics reinforce the clinical behaviors that evidence now supports. At present, the answer is often no. The most important quality decision in PCI is whether to perform PCI at all, yet current performance systems primarily evaluate what happens after that decision has already been made. A more useful framework would recognize that choosing not to perform a technically feasible procedure when the expected benefit is small requires the same judgment, and often more discipline, as deciding to intervene. Yet current performance systems rarely reward that decision [1].

Therefore, quality assessment should place greater emphasis on appropriateness, shared decision-making, and patient-centered outcomes. Indeed, we have validated tools capable of measuring what patients actually experience. Instruments such as the Seattle Angina Questionnaire quantify changes in symptoms and functional status with far greater precision than administrative measures of discharge or 30-day survival [2,5]. These outcomes are not merely patient satisfaction scores; they reflect the clinical objectives that motivate treatment in the first place.

A technically perfect PCI that does not improve symptoms, functional capacity, or quality of life of a patient cannot be considered a clinical success. Conversely, managing a patient medically while preserving an excellent quality of life is a major clinical success. It should be recognized as a successful outcome rather than an invisible non-event.

National registries remain indispensable, but their greatest value lies in identifying opportunities for improvement rather than assigning public grades to individual physicians. Registry data can detect outcome variation, identify unusually high complication rates, and prompt local review of practice [3]. Used properly, they foster cultures of learning rather than systems of punishment. Institutions are far more likely to examine difficult cases honestly when the objective is improvement rather than public embarrassment. Every experienced clinician has benefited from thoughtful peer review conducted in an environment that encourages candor rather than defensiveness. That culture is difficult to sustain when every adverse outcome is perceived primarily as a threat to reputation or reimbursement.

None of this suggests lowering standards. On the contrary, it argues for raising them. Measuring procedural safety is necessary but no longer sufficient. High-quality cardiovascular care requires technical excellence, appropriate patient selection, durable symptom relief, and decisions that reflect the goals and preferences of informed patients [1,2].

Notably, achieving that goal will require better integration of patient-reported outcomes into routine practice. Electronic health records, patient portals, and automated follow-up systems now make longitudinal assessment far more practical than it was even a decade ago. Collecting health-status information six or twelve months after PCI is no longer an unrealistic research exercise; it is now an achievable part of contemporary care [2,5].

Perhaps the greatest change must be conceptual rather than technological. We need to reconsider what we mean by productivity. For many years, productivity in procedural medicine has been closely tied to throughput: more procedures, shorter procedure times, greater laboratory utilization, and higher relative value unit production. These measures describe activity, not necessarily value. A physician who prevents unnecessary procedures through careful evaluation, optimizes medical therapy, and reserves intervention for patients most likely to benefit may perform fewer procedures while providing better care.

Under current systems, that physician may appear less productive than a colleague who performs substantially more interventions. Volume has become a misleading proxy for value [4].

If the purpose of PCI is to improve the lives of patients, then productivity should reflect improvements in health rather than the number of procedures performed. A successful day in the catheterization laboratory should include technically excellent interventions and sound decisions not to intervene when evidence indicates that medical therapy is the better option. Those decisions are every bit as valuable to patients, even if they never appear on an administrative dashboard.

This issue extends beyond interventional cardiology. Every specialty grapples with the tension between what is easy to measure and what truly matters. Nonetheless, cardiology is uniquely positioned to lead this change because few specialties have comparable evidence, national registries, and decades of experience measuring quality. The next frontier is not more measurement but better measurement.

Until our quality systems recognize that the quality of the decision is as important as the quality of the procedure, we will continue to reward poor decisions, even when the evidence clearly indicates which patients should be in the catheterization laboratory and which should not [1,3].

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LWK contributed to the conception and writing of the manuscript, critically revised the manuscript for important intellectual content, read and approved the final manuscript, and agreed to be accountable for all aspects of the work.

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