Editorial

Real Value: A Strategy for Interventional Cardiologists to Lead Healthcare Reform

Peter L. Duffy, MD, MMM, FACC, FSCAI

Cardiovascular care accounts for 43% of every healthcare dollar spent in the United States [1] and, therefore, has become a major focus of cost control. Accordingly, services that interventional cardiologists provide are seen as targets for reducing costs. To address this challenge we must prove that we add real value to our healthcare system. It is no longer good enough for us to just do our work and expect it to be appreciated. We must define what real value means and show that we deliver it consistently. In the words of former Senator Alan Simpson (R-WY), “If you’re not taking part, you’ll be taken apart.” [2] Taking part means bringing something tangible to the discussion. We must actively demonstrate our value in the present and our strategy for the future. While the practice of medicine is an art, the delivery of healthcare is a business. Businesses are rewarded for outcomes – not effort. We will not be rewarded for past successes – be they lower incidences of death from heart disease or shorter door-to-balloon times. We will be rewarded only when we also find solutions for the ongoing problems of waste, medical errors, cost and issues related to patient satisfaction that continue to plague the U.S. healthcare delivery system.

THE MAGNITUDE OF THE PROBLEM

According to the Kaiser Family Foundation, healthcare expenditures in the United States nearly $2.6 trillion in 2010, over ten times the $256 billion spent in 1980. [3] The rate of growth in recent years has slowed relative to the late 1990s and early 2000s but is still expected to grow faster than national income over the foreseeable future. [4] Addressing this growing burden continues to be a major public policy priority. Furthermore, the United States has been in a recession for much of the past decade, resulting in higher unemployment and lower incomes for many Americans. These conditions have put even more attention on health spending and affordability.

Medicare, one of the most popular U.S. public programs and the nation’s largest public health insurance program, is facing major challenges in adjusting to an aging society. Either the program and/or its financing will need to change to meet the greater demands of an increase in the number of elderly and disabled persons served by the program and the expected increases in the costs of providing health care to Americans. U.S. Department of Health and Human Services Secretary Kathleen Sebelius has stated that 11,000 new recipients become eligible for Medicare coverage every day. [5] Compound this with the finding reported by the Urban Institute [6] that, on average, each of these newly entitled beneficiaries has contributed (through payroll deduction and employer contribution) approximately $60,000 to that coverage yet will receive, over the remainder of his or her life, $170,000 in benefits. This $110,000 gap per beneficiary adds over $1.2 billion to the national credit card daily – clearly an unsustainable situation.

THE ROLE OF INTERVENTIONAL CARDIOLOGISTS

For several decades our specialty societies have been working to develop and implement cost-effectiveness strategies. One such effort has been work on appropriate use criteria (AUC). Unfortunately, a focus on AUC alone leaves unaddressed issues of successful clinically defined outcomes, patient-expected outcomes and satisfaction and wise resource utilization – all of which, when maximized, will demonstrate the real value that interventional cardiologists (and potentially all physicians) add to our healthcare system.

According to the AUC for coronary revascularization focused update [7], “the primary objective of the AUC is to improve physician decision making and patient education regarding expected benefits from revascularization and to guide future research.” Due to inherent limitations in the parameters considered by this AUC focus, it falls well short of this goal.

To start, AUC for percutaneous coronary interventions (PCI) takes into consideration six factors that are

DOI: 10.1002/ccd.25159
Published online 22 August 2013 in Wiley Online Library (wileyonlinelibrary.com).
meant to be objective and meaningful. Although they have the potential to be reproducible and verifiable, there are many instances in which, unfortunately, they are not. Moreover, they are by themselves inadequate to help clinicians and patients fully evaluate the potential benefits and risks of percutaneous revascularization.

The six factors taken into account by the AUC and their potential for ambiguity are:

- **Acute Coronary Syndrome (ACS)/Non-ACS:** Although this would seem pretty straightforward (and it is if there is documented ischemia by electrocardiogram [ECG] or biomarker criteria), it is a very gray area when the diagnosis is ACS due to unstable angina. While the definitions for diagnosing unstable angina are relatively clear by the guidelines, real-life situations are often present, blurring the lines and creating the potential to label a relatively stable patient as having ACS. This allows a more liberal interpretation of AUC and allows an operator the discretion of at least placing a patient in the “uncertain” (rather than “inappropriate”) category (see AUC #9), thus avoiding the stigma of performing an “inappropriate” procedure. While the 2012 update has addressed this to some degree (with the addition of the TIMI risk score in the evaluation), accurately placing many patients into the AUC-mandated categories still often remains problematic.

- **Symptoms:** AUC requires grading of angina by the Canadian Cardiovascular Society System (CCS). Limitations of this approach include inherent difficulty in obtaining a true and accurate history (to fit the definitions) from each patient as well as the frequency with which such defined symptoms may occur.

- **Results of Noninvasive Testing:** Although the AUC instructs us to “assume . . . the testing was performed correctly and with sufficient quality so as to produce a meaningful and accurate result within the limits of the test performance,” this is often not possible, given the vagaries of the patient’s body habitus, the true quality of the images viewed, and the inter-observer variability that often exists when such studies are performed.

- **Medical Therapy:** The AUC indicates “maximal anti-anginal medical therapy” defined as “the use of at least 2 classes of therapies to reduce angina symptoms.” What happens if a patient has an adverse reaction, is allergic to, or has other issues (such as non-compliance) related to adhering to this strategy? Moreover, a small amount of the designated drug (which may be clinically insignificant) meets this metric [8].

- **Coronary Anatomy:** This is yet another seemingly objective parameter that is anything but when considered in everyday patient care. There is significant interobserver variability in determining any degree of stenosis. While the criteria deem a “significant coronary stenosis” to be “greater than or equal to 70% luminal diameter narrowing (50% if in the left main), by visual assessment, of an epicardial stenosis measured in the ‘worst view’ angiographic projection”, fore-shortened views often show a significant stenosis that is not present when the vessel is fully laid out. Experienced and objective observers will often disagree about the actual % stenosis present even under the best of circumstances.

- **History of Coronary Artery Bypass Graft Surgery:** This is certainly one of the more straightforward metrics and should be easily distinguished and applied.

The following factors, all clinically relevant and important, are not taken into consideration by the AUC, yet all should factor into the decision as to whether a particular patient would benefit from percutaneous revascularization:

- Age of the patient
- Co-morbidities
- Risk factors (especially family history)
- Patient wishes
- Cost (stents vs. long-term medications)
- Ability to take medications (cost/compliance/contraindications)
- Risk of PCI

In defining Appropriateness it is important to consider the following:

- How much does the benefit of this procedure (or approach to care) outweigh the risk?
- How much will this person’s quality of life improve if we do this?
- How much will we reduce long- and short-term morbidity (future complications) if we perform the procedure?
- How much will we extend this person’s life expectancy with the quality of life he or she expects?

**A Clinically Defined Outcome** reflects how well a particular action achieves its intended goal from the clinician’s standpoint. Fully achieved goals deliver high levels of value. Many will argue that it is not fair to hold clinicians to outcome measures when assessing quality because there are factors (co-morbidities, patient...
compliance and patient finances are examples) that may be outside of the clinician’s control. Some believe process measures are a more reliable determinant of quality, as they are often easier to track, more objective and reproducible, and don’t necessarily take patient compliance into account. However, as in all other industries, we in healthcare will be judged by the results we achieve, not by the level of effort we demonstrate. Payers and patients alike seek results, and our systems must be geared to consistently meet our own high expectations while adding real value to the process. This requires delineating, tracking, and improving our clinically defined outcomes.

Patient-centered care is also one of the fundamental goals of health advocacy. This makes understanding Patient-Expected Outcomes critical to the success of any redesign of our approach to healthcare delivery. In its Declaration on Patient-Centered Healthcare, The International Alliance of Patients’ Organizations (IAPO) set out five principles of patient-centered healthcare: respect, choice and empowerment, patient involvement in health policy, access, and support and information. [9]

If we hope to gain traction in demonstrating our real value, then we must continue to work in educating our patients and, to the extent possible, make them partners in their healthcare decisions. This parameter also includes meeting patient expectations by delivering what they anticipate as an outcome, and doing so in a manner they perceive as being safe, timely, efficient, and equitable.

Relative Cost (Resource Utilization) is a major driver in the “real value” concept. Cost in this context refers to total resource utilization, encompassing definable dollar outlays, staff and equipment use, and the time involved in providing the care. It also includes the “opportunity cost”: could the resources and time used have been better spent in another way?

PUTTING IT ALL TOGETHER: THE REAL VALUE FORMULA

The optimal way of thinking about real value is to place the above four parameters in the following context:

```
“REAL VALUE” = CLINICALLY PATIENT- 
DEFINED + EXPECTED 
APPROPRIATENESS × OUTCOMES OUTCOMES
RELATIVE COST
```

<table>
<thead>
<tr>
<th>TABLE I. Six Principles of Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality, as defined by The Institute of Medicine (IOM), takes into account six principles:</td>
</tr>
<tr>
<td>• Safety refers to the principle of “do no harm” – avoiding injury. Clearly if an action is not appropriate it has the potential to harm the patient.</td>
</tr>
<tr>
<td>• Effective care means that the science and evidence behind the healthcare to be provided should be applied and serve as the standard in the delivery of care [10].</td>
</tr>
<tr>
<td>• Efficient care is cost effective and avoids waste. Care that is inappropriate cannot be considered to be either.</td>
</tr>
<tr>
<td>• Timely care mandates that a patient should experience no waits or delays in receiving care or service. Given limited resources, patients receiving inappropriate care will fill a slot another patient with more appropriate indications for that care should occupy, resulting in delay for that patient and potential gridlock for the system.</td>
</tr>
<tr>
<td>• Patient-centered care respects patients’ preferences, needs and values. Essentially it seeks to place an informed patient in control of his or her own health destiny with providers as an essential guide.</td>
</tr>
<tr>
<td>• Equitable care seeks to eliminate disparity in care provision.</td>
</tr>
</tbody>
</table>

This concept integrates the Institute of Medicine’s six pillars of quality [10] (see Table I) into an understandable and useful formula that individual physicians and healthcare system administrators can use to develop and refine processes of care that will achieve the goal of quality while showing payers and the public that we deliver true and real value with our efforts. The publications on AUC developed by cardiovascular societies already include a scale of 1–9 [11] with 1 now defined as “rarely an appropriate option for management of patients in this population due to the lack of a clear benefit/risk advantage” and 9 being “an appropriate option for management of patients in this population due to benefits generally outweighing risks.” Keeping this scale in mind facilitates integrating appropriateness into the real value formula. Making appropriateness the multiplier in the formula reflects the fact that care with a low level of appropriateness adds little real value, and care that is inappropriate adds none. In fact, care that is clearly inappropriate will have a value of zero. Relative cost is in the
denominator to reflect that lower resource use will increase value.

In order to effectively put the real value formula into practice, it is also important to consider assigning different weights to the parameters of clinically derived outcomes and patient-expected outcomes: it may be that one or the other is two or three (or even more) times more important than the other. Such decisions should be specific to particular patients and their clinical situations [12].

CONCLUSION

Interventional cardiology already owns quality in healthcare by its pioneering work in developing guidelines, instituting appropriate use criteria and championing meaningful registries such as the NCDR. These efforts have had a clear and positive impact on the care we deliver. Adopting a real value approach is the logical next step. Implementing real value on an individual patient basis can serve as our framework for reforming the healthcare delivery system and further distinguishing us as thought-leaders with visionary solutions. The key is for us to adopt, understand and implement each of the four parameters using the real value concept and apply those results to all of our work.

REFERENCES

6. urbaninstitute.org.