WHITE PAPER

Understand the Aspects of the Patient Experience that Matter Most

Patient Satisfaction Is Integral to CABG Quality and Reimbursement

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Patient satisfaction has become recognized as a key marker for healthcare quality and hospital performance

High levels of patient satisfaction strengthen customer loyalty, build institutional reputation and brand, and boost utilization of hospital services through word-of-mouth and online ratings[1].

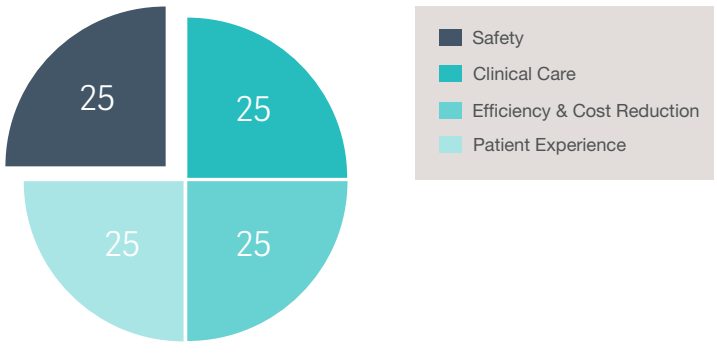
Consumer-directed websites designed to enable patients to make informed choices about healthcare providers and treatments are now commonplace. National survey data indicate that 1 in 6 Americans consulted online rankings or reviews of clinicians in the prior year, and 1 in 7 consulted analogous reviews of hospitals or medical facilities[2]. Further, the financial imperative to achieve and maintain acceptable levels of patient satisfaction has become even stronger as reimbursement is increasingly linked to patient experience measures[2-4]. Because coronary artery bypass grafting (CABG) is one of the most commonly performed[5] and costly[6] major surgeries worldwide, patient experience related to CABG procedures has important reputational and financial implications.

Patient Experience Measures Are Widely Incorporated

In the United Kingdom (UK), patient satisfaction is explicitly designated as a critical component of quality of care[7-8]. Measurement of patient experience to identify strengths and weaknesses of healthcare delivery, drive quality improvement, and promote patient choice is mandatory. In addition to success and complication rates, healthcare providers are assessed on whether they provide patients with dignity and respect, compassion, and the opportunity to be involved in care decisions. These data are collected using the NHS National Patient Survey; results are published, and a proportion of providers' income is conditioned on this feedback.

Patient experience in the United States is assessed nationally using the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) survey[9]. The HCAHPS survey is administered to a random sample of adult patients across medical conditions between 48 hours and six weeks after discharge; the survey is not restricted to Medicare beneficiaries. In 2012, the Centers for Medicare & Medicaid Services (CMS) linked reimbursement to HCAHPS; currently, patient experience is weighted equally with safety, clinical care, and efficiency/cost reduction. (Figure 1)

Figure 1
Relative Weights (%) for CMS Value-Based Purchasing Fiscal Year 2018 and Beyond



Furthermore, CMS publishes HCAHPS results on its Hospital Compare website and has begun awarding star ratings (1 star = "worst", 5 stars = "best") for US hospitals based on the previous four quarters of HCAHPS surveys[11].

Patient experience has also been incorporated into assessment of healthcare quality by several other countries including Canada, Denmark, Norway, the Netherlands and Germany[12]. In Germany, Project "Weisse List/White List" has conducted inpatient satisfaction surveys since 2011 with the primary objective of assisting patients in selecting hospitals through online publication of the results[13].

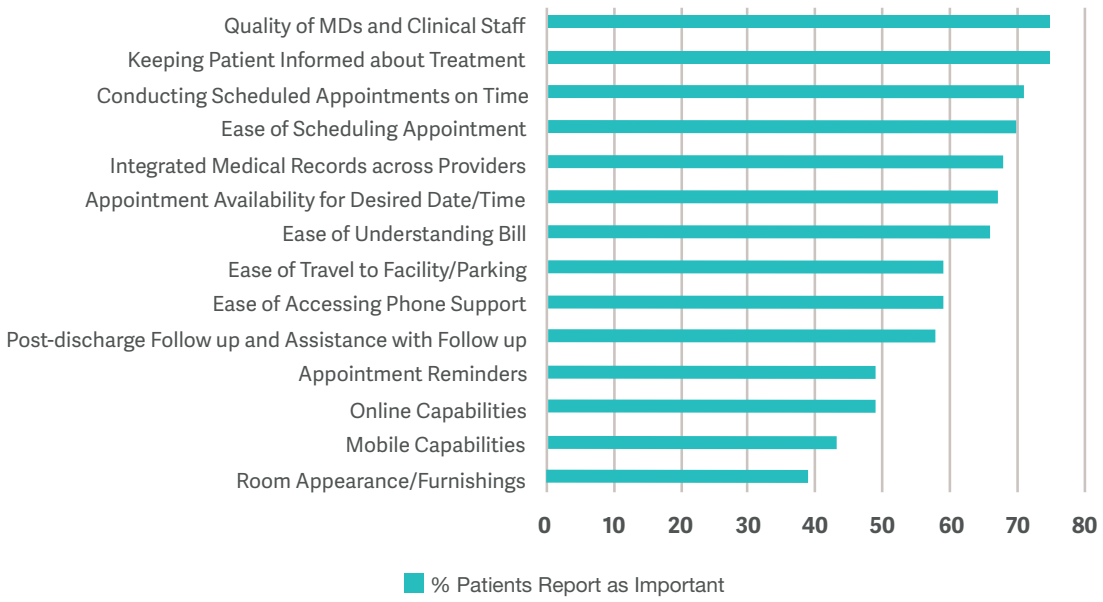
What Aspects of Hospital Experience Matter Most to Patients?

The HCAHPS and the NHS National Patient Survey are the longest standing patient healthcare experience surveys. They assess similar patient experience domains, including quality of communication with medical professionals, hospital staff responsiveness and supportiveness, communication regarding medications, communication about pain control, hospital cleanliness and quietness, and the adequacy of care transitions.

Adequate communication about treatment and pain management are critical domains for patient satisfaction[1]. And, there is broad consensus that patient satisfaction is strongly influenced by the quality of nursing[13]. In one German study, nursing kindness was the second most important predictor of patient satisfaction after treatment outcome[14]. In a study of patient satisfaction in 12 European countries and the US[15], nursing had a significant impact, with better staffing ratios and work environment correlating with both higher quality of care and greater patient satisfaction. A survey of US healthcare consumers conducted in 2015[1] reinforces the premier value that perceived treatment quality and communication hold for patients, while factors such as online/mobile access and room furnishings are low priority. (Figure 2)

Figure 2

Important Factors in Patient Healthcare Experience



Source: Deloitte Center for Health Solutions: 2015 Survey of US Health Care Consumers[1]

The International Consortium for Health Outcomes Measurement (ICHOM) has proposed an alternative collection of health-care quality measures designed to represent the results that matter most to patients[16]. To that end, ICHOM has designed and promotes a standard set of outcomes to assess coronary artery disease treatments. The ICHOM Coronary Artery Disease Data Collection Set assesses three patient-reported measures: angina, dyspnea and depressed mood.

Concerns Raised by Linking Reimbursement to Patient Satisfaction

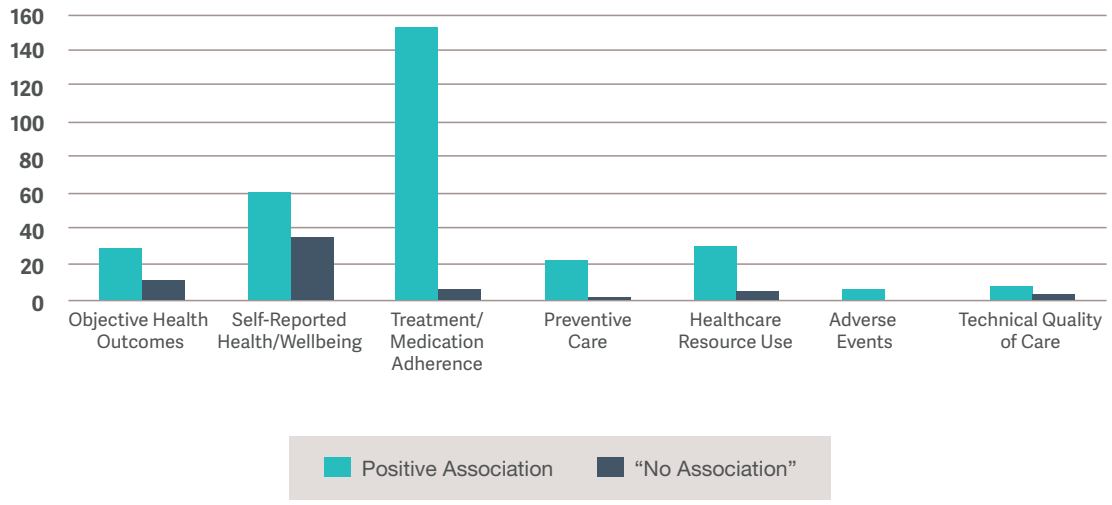
Critics argue that linking reimbursement to patient satisfaction incentivizes institutions to focus on priorities with low actual impact on health quality, specifically encouraging them to behave more like hotels than healthcare delivery organizations[3]. Further, it is argued that the desire to please may reduce the quality of care provided when patient demands conflict with good clinical practice, such as requests for antibiotics to treat viral infections or excessive reliance on pain medications[3, 4]. However, the majority of research indicates that improved patient experience is linked to a variety of positive quality and cost indicators and that cultivating patient satisfaction does not conflict with providing high-quality, cost-effective care[3, 4, 17].

High Patient Satisfaction Is Associated with Higher Quality Care

Patient-centered care is consistently related with desirable clinical outcomes and greater patient safety. A recent review, summarizing evidence from 55 studies and meta-analyses spanning US, UK, Europe, Canada and Taiwan[17] documented consistent positive associations between patient experience, patient safety and clinical effectiveness for a wide range of disease areas, settings, outcome measures and study designs. (Figure 3)

Figure 3

Studies Assessing Relationship between Patient Satisfaction and Quality of Care



Modified from Doyle et al.[17]

In one study of 2429 acute care hospitals in the US, institutions with HCAHPS scores in the highest quartile had superior adherence to evidence-based care protocols[18]. Similar results were obtained in a study of 2953 major US surgical hospitals: hospitals with the most favorable patient experience metrics had higher surgical process quality, lower surgical mortality rates, and lower surgical readmissions[19]. Glickman et al. examined the relationship between patient satisfaction surveys and outcomes for 3562 patients treated for acute myocardial infarction (AMI) at 25 US centers[20]. Patient satisfaction was positively correlated with 13 of 14 acute myocardial infarction performance measures. After controlling for hospitals' overall guideline adherence, higher patient satisfaction scores were associated with significantly lower risk-adjusted inpatient mortality (P=0.025). In another study, patients' overall ratings and willingness to recommend hospitals to family and friends were lower in centers that consistently performed poorly on cardiac (AMI and heart failure) process measures[21]. Most recently, a comparison of risk-adjusted outcomes for 3000 CMS-star-rated US hospitals revealed that hospitals with the highest star ratings had significantly lower rates of in-hospital complications and 30-day readmissions[11].

High Patient Satisfaction Is Associated with Better Financial Performance

Recent analyses conducted by Deloitte documented that hospitals with high patient-reported experience scores have significantly higher profitability, even after controlling for other factors that can drive hospital performance, such as location, hospital ownership type, or payer and patient mix[1]. The difference in average net margin between hospitals rated as "excellent" vs. "moderate" was 2.6%, with patient experience accounting for 60% of the difference. In addition to improved profitability, better patient satisfaction is correlated with other factors that benefit hospitals financially, including lower medical malpractice risk and reduced staff turnover [1, 4].

High Patient Satisfaction Can Be Cost-Effective

Investments in improved patient experience can enable hospitals to save money through lower utilization of healthcare resources, which is important in value-based reimbursement for services. Two large US studies documented that superior patient satisfaction was associated with lower spending. In a study of 2981 US acute care hospitals, Tsai documented lower 30- and 90-day episode-based Medicare spending for high-quality hospitals (defined as being in the lowest quartile in surgical mortality and in the highest quartile of patient satisfaction scores) than low-quality hospitals (highest quartile of surgical mortality rates and the lowest quartile of patient satisfaction scores)[22]. This pattern persisted after adjusting for patient demographics and comorbidities. Trzeciak et al. examined the relationship between Medicare star ratings for patient experience and Medicare spending in 3030 US hospitals[23]. Hospitals rated as providing better patient experience had lower Medicare spending per beneficiary. After controlling patient socioeconomic status and case mix, spending for hospitals with the highest star ratings was almost 6% less than those with the lowest star ratings.

Improving Coronary Artery Bypass Graft (CABG) Patient Experience

A number of advances have been documented to improve patient experiences during coronary artery bypass graft surgery, ranging from advanced communication modalities that keep patients informed and engaged to less invasive approaches to surgery that reduce patient discomfort and speed recovery.

Cardiac surgery approaches utilizing smaller incisions or less conspicuous incision sites have been related to improved patient satisfaction[24 - 25]. Less invasive approaches to harvesting saphenous vein and radial artery for use as bypass graft conduits improve CABG patient experience significantly. In 2017, the International Society for Minimally Invasive Cardiac Surgery (ISMICS) published a consensus statement on endoscopic harvesting of bypass conduit for CABG based on a systematic review of 76 studies across a total of 281,459 patients[26]. In addition to reaffirming the highly significant impact of endoscopic conduit harvest in reducing postoperative wound complications, the consensus panel concluded that endoscopic vein harvest (EVH) and endoscopic radial artery harvest (ERAH) were associated with significant reductions in postoperative pain and disability and superior patient satisfaction compared with traditional, open incisions. These benefits, in combination with an absence of detrimental impact on conduit quality and revascularization outcomes, led the panel to conclude that EVH and ERAH should be the standard of care in CABG patients who require saphenous vein and radial artery bypass conduits. (Table 1)

Table 1.

ISMICS Recommendations on Endoscopic Conduit Harvest for CABG

Endoscopic Vein Harvest (EVH)

Recommendation: **Endoscopic vein harvest is recommended for vein harvesting to improve patient satisfaction and postoperative pain when compared with OVH (class I, level A).**
EVH is associated with an increase in patient satisfaction, satisfaction with cosmesis and mobility (level A)
EVH is associated with a reduction in the incidence (level A) and severity (level B-NR) of postoperative pain, in the severity of pain at 3-to 6 weeks (level A), and in the incidence at 6-month follow-up (level B-R)
EVH is associated with a reduction in the incidence of sensory dysfunction postoperatively, at 3 - to 6 - week follow-up and at 6 - month follow-up (level A)

Endoscopic Radial Artery Harvest (ERAH)

Recommendation:

The endoscopic approach is recommended for radial artery harvesting to improve patient satisfaction and postoperative pain (class I, Level B-NR)

ERAH is associated with an increase in patient satisfaction (level B-R) and an increase in patient satisfaction regarding cosmesis (level B-NR).

ERAH is associated with a reduction in postoperative pain (level B-R)

ERAH is associated with a reduction in neurological dysfunction at 1 month and at 6-9 months (level B-NR).

Another area that lowers patient satisfaction is the postoperative mechanical ventilation required for varying durations in the ICU. In a retrospective study of complaints in 800 patients who were supported with mechanical ventilation following cardiac surgery, patient-ventilator dyssynchrony was independently associated with patient discomfort[27]. (Table 2)

Table 2.

Independent Predictors of Patient Discomfort during Mechanical Ventilation

	p Value
Aspiration of sputum	0.043
Patient-ventilator dyssynchrony	0.017
Dry mouth/thirst	0.036
Limitation of motion	0.022
Communication barriers	0.041
Sleep disorders	0.045
Limited understanding of disease	0.052
Lack of medical personnel support	0.034

Patient-ventilator dyssynchrony (or asynchrony) occurs when the phases of breathing delivered by the ventilator do not match those of the patient. Asynchronies can occur throughout mechanical ventilation and negatively affect patient comfort, duration of mechanical ventilation, length of ICU stays, and mortality[28]. Patient-ventilator experience can be significantly improved with personal ventilation utilizing neutrally adjusted ventilator assist (NAVA). NAVA delivers assist in proportion to and in synchrony with the patient's respiratory efforts, which can contribute to fewer periods of over- and under-assist[29-32], improved patient comfort[29], and improved sleep quality[30]. A 2018 review of approaches to minimize patient-ventilator asynchronies examined 10 separate comparisons of NAVA to alternative approaches and concluded that NAVA significantly improved patient-ventilator coupling, comfort and dyspnea[28].

As reflected in ICHOM's recommended coronary artery disease data set, patients place a high value on the relief of angina and dyspnea. CABG is recommended for relief of those symptoms as well as prolongation of survival[5]. The possibility of CABG-related stroke is a significant concern for patients who require myocardial revascularization[33]. A comprehensive review of the "state of the art" in surgical coronary revascularization published in Circulation in 2017 concludes that stroke rate is significantly reduced with off-pump coronary artery bypass (OPCAB)[5]). Further, reduction in aortic manipulation is directly related to reduction in stroke[5], with reduced rates of cerebral injury documented for both "no touch" all arterial grafting and clampless proximal anastomosis devices[34]. There is also a risk of stroke in the 20-30% of CABG patients who develop new onset atrial fibrillation postoperatively; emerging data support the benefit of intraoperative isolation or occlusion of the left atrial appendage to decrease this risk[35].

Conclusions

There is growing consensus that patient experience and satisfaction are integral to promoting high-quality and high value-care and should be a key component of value-based payment programs. Numerous studies reinforce that there need not be a tradeoff between delivering technically excellent care and delivering care that is attentive to the needs and expectations of the patient. In fact, successful delivery of patient-centered care has been associated with superior clinical quality and cost effectiveness. Advances in surgical technique and patient support continue to improve CABG clinical outcomes and recovery, dimensions that are central to patient satisfaction and institution financial health.

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