

Table 1: Evidence Table

Type of Evidence	Findings	Citations
Patient Experience of Care Domains		
<p>Meta-analysis on: Care Coordination, Communication, Family Involvement, Hospital Environment, Pain Management</p>	<p>Investigators reviewed 55 studies published between 1988 and 1998 that were relevant to parent satisfaction with pediatric or neonatal health care services and identified 11 studies that specifically measured aspects of neonatal health care services.</p> <p>To identify domains that are important to parent satisfaction, studies used a variety of methods including exploratory and focused interviews, survey administration, and content analysis.</p> <p>Aspects of pediatric health care that mattered most to parents included communication, care coordination, pain management, hospital environment, and family involvement in care. For example, family involvement in care and decision-making was felt by 92% of parents of children with special needs to be best accomplished through discussions with parents and physicians.</p>	<p>Conner JM, Nelson EC. Neonatal intensive care: satisfaction measured from a parent's perspective. <i>Pediatrics</i>. 1999;103(1 Suppl E):336–349.¹⁰⁰</p>
<p>Prospective pre-post intervention study on: Hospital Environment</p>	<p>Investigators conducted an investigation of bothersome noises and noise sources in the hospital environment before and after implementation of an intervention to reduce noise levels throughout the hospital.</p> <p>The study was conducted in 57 patient care units in 2 hospitals affiliated with the Mayo Clinic. 1,479 patients and 3,668 staff were surveyed to identify bothersome noises.</p> <p>Investigators found that noises were the most disruptive during the morning hours and that voices were the most bothersome type of noise. The study concluded that identification of noise sources, standardization of noise measurement methods, and minimization of bothersome noise could greatly improve the hospital environment for both patients and staff.</p>	<p>Dube JAO, Barth MM, Cmiel CA, Cutshall SM, Olson SM, Sullia SJ, Nesbitt JC, Sobczak SC, Holland DE. Environmental noise sources and interventions to minimize them: a tale of 2 hospitals. <i>J Nurs Care Qual</i>. 2008;23(3):216–224; quiz 225–226.¹⁰¹</p>

<p>Cross-sectional study on: Communication</p>	<p>This nested study examined the importance of parent-perceived communication with pediatricians in overall parent satisfaction with care.</p> <p>The study population consisted of 570 parents of children aged 6 months to 10 years who were diagnosed with upper respiratory tract infections in outpatient settings. Parents completed a post-visit survey evaluating instances of communication with the pediatrician, referred to as communication “events.” Independent raters also coded the communication events from videotapes.</p> <p>The study found that parents are significantly more satisfied with the quality of care when they report more communication (i.e., 3 communication events) and that their satisfaction ratings are on average 9 points higher than parents who report less communication. In addition, parent and third-party rater reports of communication were nearly uncorrelated, indicating the importance of assessing parents’ perceptions rather than relying solely on other means of evaluating communication.</p>	<p>Beckett MK, Elliott MN, Richardson A, Mangione-Smith R. Outpatient satisfaction: the role of nominal versus perceived communication. <i>Health Serv Res.</i> 2009;44(5 Pt 1):1735–1749.¹⁰²</p>
<p>Cross-sectional study on: Admission, Care Coordination, Communication, Discharge, Family Involvement, Hospital Environment, Overall Rating, Responsiveness</p>	<p>This study evaluated survey responses from the Press Ganey 2002 Pediatric Inpatient National Database to determine the most important priorities from parents’ perspectives for improving pediatric care.</p> <p>The study population consisted of 50,446 parents of pediatric patients hospitalized at 65 hospitals across the U.S. The study tested the validity and reliability of the survey instrument and found it to be a significant predictor of theoretically important outcomes.</p> <p>Survey items predicted 78% of the variance in families’ stated likelihood to recommend the hospital to others. The identified priorities for improving parent experience included (1) improving staff sensitivity to inconveniences faced by families, (2) addressing emotional and</p>	<p>Miceli PJ, Clark PA. Your patient--my child: seven priorities for improving pediatric care from the parent’s perspective. <i>J Nurs Care Qual.</i> 2005;20(1):43–53; quiz 54–55.⁵⁹</p>

	<p>spiritual needs of families, (3) improving staff response to concerns/complaints, (4) including parents in decisions about the child's treatment, (5) improving accommodations and comfort for visitors, (6) assisting families who need special facilities during the child's hospital stay, and (7) making the child's hospital stay as restful as possible.</p>	
<p>Cross-sectional study on: Communication, Hospital Environment, Overall Rating</p>	<p>To develop an intervention to improve patient satisfaction, investigators examined the specific attributes within larger dimensions of hospital care that most influence patient satisfaction.</p> <p>The study used data from 31,471 patients (mean age 61.8 years) collected between January 2007 and June 2008 from 32 hospitals in a large, national private not-for-profit hospital system. Patient satisfaction was measured using the Adult HCAHPS survey. Nursing care, staff care, physician care, and environment and their relationship with overall evaluation of hospital care and intention to recommend the hospital were analyzed.</p> <p>Nursing care had the largest influence on both overall hospital rating and intention to recommend. Furthermore, patients' highest priority was to be treated with courtesy and respect by nurses and physicians.</p>	<p>Otani K, Herrmann PA, Kurz RS. Improving patient satisfaction in hospital care settings. <i>Health Serv Manage Res.</i> 2011;24(4):163–169.¹⁰³</p>
<p>Cross-sectional study on: Safety</p>	<p>This study used a survey to investigate the role of patient safety perceptions in overall patient satisfaction.</p> <p>The study population consisted of 996 randomly selected adult patients from 3 hospitals affiliated with a single Eastern U.S. health system. Patients were eligible to complete the survey if they had had a medical or surgical visit within the previous 90 days. The content for the survey items, including patient safety items, was based on inpatient focus groups and used themes and language of patients.</p>	<p>Rathert C, May DR, Williams ES. Beyond service quality: the mediating role of patient safety perceptions in the patient experience-satisfaction relationship. <i>Health Care Manage Rev.</i> 2011;36(4):359–368.⁶¹</p>

	Controlling for age and health status, patient safety perceptions explained significant variance in overall satisfaction ($\Delta R^2 = .44, .55, \text{ and } .49$, respectively, for the 3 hospitals). Patients who reported more positive safety experiences were more satisfied with their care.	
Cross-sectional study on: Communication	<p>Investigators conducted a retrospective study evaluating how domains of patient satisfaction in hospitals predict Adult HCAHPS global rating scores. They used logistic regression analysis of patient-level satisfaction domain scores from a commercially available survey and Adult HCAHPS top-box scores controlling for potential confounding variables such as patient demographics, underlying diagnosis, hospital size, and location.</p> <p>The study population consisted of over 136,000 randomly sampled adult respondents who were inpatients at 1 of 302 U.S. hospitals randomly selected from the Press Ganey 2008 inpatient database.</p> <p>The investigators found that each 1-point increase in the nursing domain score increased the odds of achieving an Adult HCAHPS overall rating top-box score.</p>	Wolosin R, Ayala L, Fulton BR. Nursing care, inpatient satisfaction, and value-based purchasing: vital connections. <i>J Nurs Adm.</i> 2012;42(6):321–325. ⁶⁰
Survey study on: Admission, Communication, Discharge, Hospital Environment, Overall Rating, Responsiveness	<p>Investigators sought to develop inpatient and outpatient questionnaires with sufficient validity and reliability to be used to evaluate patient perceptions of quality. Among the domains of patient experience measured were admission, communication (with physicians and nurses), discharge, hospital environment, overall rating, and responsiveness.</p> <p>The study population consisted of over 50,000 adult inpatients, emergency room patients, and ambulatory surgery patients from over 300 hospitals from every U.S. census region.</p> <p>The investigators developed separate “Quality of Care Monitors” questionnaires for inpatients and outpatients and found that the reliability and predictive validity</p>	Carey RG, Seibert JH. A patient survey system to measure quality improvement: questionnaire reliability and validity. <i>Med Care.</i> 1993;31(9):834–845. ⁸⁴

	were robust for the domains selected.	
Qualitative study on: Care Coordination, Communication, Child-Centeredness, Family Involvement, Responsiveness	<p>Investigators explored the aspects of physician communication that children with life-limiting illnesses and their parents perceived as most important in pediatric palliative care.</p> <p>The study cohort consisted of 20 parent and child pairs of pediatric oncology and cardiology patients (mean age 14.25 years) from 2 children's hospitals and 1 pediatric hospice in Los Angeles. Individual narratives from children and parents about their perspectives on physician communication were collected and analyzed.</p> <p>The investigators found 5 domains that children and parents considered most salient and influential in quality of care: relationship building, demonstration of effort and competence, information exchange, availability, and appropriate level of child and parent involvement. Coordination of care was an additional aspect that parents considered important.</p>	Hsiao JL, Evan EE, Zeltzer LK. Parent and child perspectives on physician communication in pediatric palliative care. <i>Palliat Support Care</i> . 2007;5(4):355–365. ⁵⁵
Qualitative study on: Communication, Family Involvement, Hospital Environment	<p>Investigators conducted a secondary analysis of interview data to explore how parents at risk of delivering very premature infants (22 to 25 weeks gestation) interpreted their interpersonal interactions with health care providers.</p> <p>The study population consisted of 54 parents (40 mothers and 14 fathers) who described and evaluated their expectations and experiences interacting with care providers prenatally.</p> <p>The investigators found that parents had certain expectations about the care they received, including being treated with respect, being involved in decision-making, being supported by health care providers, being informed and given unbiased information about all possibilities of care, and having a therapeutic environment in which to make decisions.</p>	Kavanaugh K, Roscigno CI, Swanson KM, Savage TA, Kimura RE, Kilpatrick SJ. Perinatal palliative care: Parent perceptions of caring in interactions surrounding counseling for risk of delivering an extremely premature infant. <i>Palliat Support Care</i> . 2013:1–11. ⁵⁶
Qualitative study on:	This study explored experiences of care	Uhl T, Fisher K,

<p>Care Coordination, Communication, Discharge, Family Involvement, Hospital Environment, Pain Management, Safety, Overall Rating</p>	<p>for parents of hospitalized children and identified core concepts important to parents.</p> <p>The study involved 2 phases: Phase 1 included semi-structured focus groups consisting of 9 parents of children with life-threatening illnesses. Phase 2 included an inpatient hospital experience survey distributed to all families of children discharged between March and July 2011 to measure parent experience of care.</p> <p>Parents reported communication and involvement in discussions about treatment as important aspects of their hospital experience. Lack of knowledge about children’s treatment plans was an important gap in communication that negatively influenced parents, while being given the opportunity to be involved in their children’s care gave them a sense of empowerment. Other important aspects of their experience included care coordination, hospital environment, safety, pain management, and admission and discharge processes. 73% of parents reported that the overall quality of care was excellent.</p>	<p>Docherty SL, Brandon DH. Insights into patient and family-centered care through the hospital experiences of parents. <i>J Obstet Gynecol Neonatal Nurs JOGNN NAACOG.</i> 2013;42(1):121–131.⁵⁴</p>
<p>Qualitative study on: Age-Appropriateness, Communication, Family Involvement, Informed, Pain Management, Teens</p>	<p>Investigators examined the preferences of chronically ill adolescents regarding providers’ qualities in outpatient and inpatient settings.</p> <p>The study population consisted of adolescents aged 12 to 19 years with various chronic conditions treated in a university children’s hospital. A series of methods were used, including 31 interviews conducted at home, 34 interviews conducted in the hospital by 9 fellow adolescent patients, and a web-based questionnaire for which 990 responses were collected.</p> <p>Adolescents prioritized having physicians whom they trusted and who were informed and technically competent and attended to their needs. They also valued</p>	<p>Van Staa A, Jedeloo S, van der Stege H, On Your Own Feet Research Group. “What we want”: chronically ill adolescents’ preferences and priorities for improving health care. <i>Patient Prefer Adherence.</i> 2011;5:291–305.⁵⁷</p>

	<p>the ability to be involved in their own care and to have physicians listen to and respect them and answer their questions. Clear communication was also important. Short wait times and attractive outpatient surroundings were low priorities. In addition, in the inpatient setting, adolescents cited the importance of pain management, family involvement, and age-appropriateness. Fifty-two percent of respondents felt that older children should receive more attention.</p>	
<p>Importance of Patient Experience of Care as a Measure of Patient- and Family-Centeredness and Relationship to Other Quality Measures and Outcomes</p>		
<p>Systematic literature review</p>	<p>Investigators performed a systematic literature review to summarize existing evidence on the relationship between patient experience of care and patient safety and clinical effectiveness outcomes.</p> <p>Data were summarized from 55 studies that assessed associations between patient experience and outcomes at the patient level and as an aggregate measure at the organizational level using validated measurement tools. Outcome measures included objective health outcomes, self-reported health, adherence to treatment, preventive care, health care resource use, adverse events, and technical quality of care.</p> <p>Positive associations between patient experience and patient safety and clinical effectiveness outnumbered findings of "no association" (429 measures of positive associations vs. 127 measures of lack of association), and only 1 study found negative associations.</p>	<p>Doyle C, Lennox L, Bell D. A systematic review of evidence on the links between patient experience and clinical safety and effectiveness. <i>BMJ Open</i>. 2013;3(1).⁹⁷</p>
<p>Prospective cohort study</p>	<p>Investigators assessed the relationship between parents' perceptions of their child's hospital discharge and subsequent unplanned 30-day hospital readmission.</p> <p>Using a survey adapted from the adult care transitions measure survey, 348 parents were surveyed following their child's discharge between March and October 2010.</p>	<p>Berry JG, Ziniel SI, Freeman L, Kaplan W, Antonelli R, Gay J, Coleman EA, Porter S, Goldmann D. Hospital readmission and parent perceptions of their child's hospital discharge. <i>Int J Qual Health Care</i>.</p>

	<p>Controlling for clinical, patient, and hospital characteristics, children were less likely to have unplanned hospital readmissions if their parents strongly agreed with the statement, "I felt that my child was healthy enough to leave the hospital" (adjusted odds ratio [aOR] .2; 95% CI .1 to .6).</p>	2013;25(5):573–581. ⁹⁵
Prospective cohort study	<p>Investigators studied the association between patient satisfaction, health care utilization, expenditures, and mortality.</p> <p>The study cohort consisted of 51,946 adult respondents to the 2000-2007 National Medical Expenditure Panel Survey. Two years of panel data for each patient were used, as well as mortality follow-up data through December 31, 2006 for the 2000-2005 sub-sample of 36,428 people. Year 1 patient satisfaction was assessed using 5 items from the Adult CAHPS Health Plan survey.</p> <p>After adjusting for socio-demographics, insurance status, availability of a usual source of care, chronic disease burden, health status, and year 1 utilization and expenditures, investigators found that respondents in the highest patient satisfaction quartile, relative to those in the lowest patient satisfaction quartile, had lower odds of any emergency department visit (aOR .92; 95% CI .84 to 1.00) and higher odds of any inpatient admission (aOR 1.12; 95% CI 1.02 to 1.23). They had 8.8% greater total expenditures (95% CI 1.6% to 16.6%), 9.1% greater prescription drug expenditures (95% CI 2.3% to 16.4%), and higher mortality (adjusted hazard ratio 1.26; 95% CI 1.05 to 1.53).</p>	<p>Fenton JJ, Jerant AF, Bertakis KD, Franks P. The cost of satisfaction: a national study of patient satisfaction, health care utilization, expenditures, and mortality. <i>Arch Intern Med.</i> 2012;172(5):405–411.⁸⁸</p>
Prospective cohort study	<p>Investigators examined whether patients' experiences with non-technical aspects of care, such as patient education and discharge planning, are associated with long-term health outcomes.</p> <p>The study cohort consisted of 2,272 acute myocardial infarction patients from 23</p>	<p>Fremont AM, Cleary PD, Hargraves JL, Rowe RM, Jacobson NB, Ayanian JZ. Patient-centered processes of care and long-term outcomes of myocardial infarction. <i>J Gen Intern</i></p>

	<p>New Hampshire hospitals who were discharged between January 1996 and December 1997. Outcomes included self-reported overall health, physical health, mental health, chest pain, shortness of breath, and clinical measures obtained from hospital discharge abstracts. Hospital care was assessed using questions adapted from the Picker inpatient questionnaire. Assessments of self-reported health were based on responses to questions adapted from the Medical Outcomes Study questionnaire (functional health status), and modified London School of Hygiene measures (cardiac symptoms).</p> <p>After adjusting for post-discharge health status and other clinical factors, patients with worse patient experience of care had lower ratings of overall health (48.4 vs. 52.5 on a 100-point scale; $p = .02$) and physical health (59.7 vs. 68.4; $p < .001$), and were more likely to have chest pain (OR 1.6; 95% confidence interval 1 to 2.4).</p>	<p><i>Med.</i> 2001;16(12):800–808.¹⁰⁴</p>
<p>Prospective cohort study</p>	<p>Investigators examined the association between parent-reported quality of primary care and subsequent health care use for children with special health care needs.</p> <p>The study cohort consisted of 1,591 children ≤ 17 years, who were part of the 2004-2005 and 2005-2006 Medical Expenditure Panel Survey panels. Primary care quality was assessed using measures for family-centered care, timeliness of care, and realized access derived from the Clinician and Group CAHPS (CG CAHPS) survey. Rates of parent-reported emergency department (ED) visits and hospitalizations after survey completion were used as the main outcome measures.</p> <p>Multivariate analysis revealed that poor family-centeredness was associated with higher rates of subsequent non-urgent ED encounters (incidence rate ratio [IRR]</p>	<p>Raphael JL, Mei M, Brousseau DC, Giordano TP. Associations between quality of primary care and health care use among children with special health care needs. <i>Arch Pediatr Adolesc Med.</i> 2011;165(5):399–404.¹⁰⁵</p>

	<p>2.24; 95% CI 1.32 to 3.80). For privately insured children, poor family-centeredness (IRR 3.87; 95% CI 1.23 to 12.13) and poor realized access IRR (3.45; 95% CI 1.30 to 9.19) were associated with more hospitalizations.</p>	
<p>Prospective cohort study</p>	<p>Investigators studied the association between patient-centered communication in primary care visits and subsequent health and medical care use.</p> <p>The study cohort consisted of 315 patients (≥18 years old) of 39 randomly selected family physicians.</p> <p>Office visits were audiotaped and scored for patient-centered communication. Patients were asked for their perceptions of the patient-centeredness of the visit. The study assessed the following outcomes: (1) patients' health assessed by a visual analogue scale on symptom discomfort and concern; (2) self-report of health, using the Medical Outcomes Study Short Form-36; and (3) medical care utilization variables of diagnostic tests, referrals, and visits to the family physician, assessed by chart review.</p> <p>Adjusting for the clustering of patients by physician and controlling for confounding variables, patients who perceived that their visit had been patient-centered experienced lower levels of post-encounter discomfort and received fewer diagnostic tests ($p = .05$) and referrals ($p = .01$) in the subsequent 2 months ($p = .03$).</p>	<p>Stewart M, Brown JB, Donner A, McWhinney IR, Oates J, Weston WW, Jordan J. The impact of patient-centered care on outcomes. <i>J Fam Pract.</i> 2000;49(9):796–804.¹⁰</p>
<p>Retrospective cohort study</p>	<p>Investigators used the Kaiser Permanente Georgia (KPG) satisfaction survey to examine the association between patient experience of care in an outpatient setting and enrollment status in a managed care organization.</p> <p>The study cohort consisted of 18,809 unique subscriber units who were eligible for medical benefits with KPG in 2001 or 2002 and who had completed at least 1 post-visit satisfaction survey in 2000,</p>	<p>Roblin DW, Roberts MH. Patient dissatisfaction as a determinant of voluntary disenrollment in a managed care organization. <i>J Ambulatory Care Manage.</i> 2010;33(2):163–172.¹⁰⁶</p>

	<p>2001, or 2002.</p> <p>Patients who reported dissatisfaction with care access, practitioner interaction, or overall visit experience had a significantly higher likelihood of voluntary disenrollment from the managed care organization compared with patients who reported a satisfactory visit experience.</p>	
Cross-sectional study	<p>Investigators examined whether hospitals whose patients report higher overall satisfaction with interactions with hospital staff and with the discharge process are more likely to have lower 30-day readmission rates after adjusting for hospital clinical performance.</p> <p>The study population consisted of patients from approximately 2,500 hospitals that had complete information for Adult HCAHPS survey scores; clinical performance measures; 30-day readmission rates for acute myocardial infarction (AMI), heart failure, and pneumonia; and American Heart Association hospital structural characteristics. Patient satisfaction, clinical process measure, and readmission rate data were obtained from the Hospital Compare database for the period of July 2005 to June 2008.</p> <p>Higher hospital-level patient satisfaction scores (overall and for discharge planning) were independently associated with lower 30-day readmission rates for AMI (OR .97; 95% CI .94 to .99), heart failure (OR .96; 95% CI .95 to .97), and pneumonia (OR .97; 95% CI .96 to .99).</p>	<p>Boulding W, Glickman SW, Manary MP, Schulman KA, Staelin R. Relationship between patient satisfaction with inpatient care and hospital readmission within 30 days. <i>Am J Manag Care.</i> 2011;17(1):41–48.⁸</p>
Cross-sectional study	<p>Investigators examined the link between patient satisfaction and adherence to highly active antiretroviral therapy (HAART).</p> <p>The study population consisted of adult patients (≥18 years old) receiving HIV primary care at 2 health centers in Houston, Texas. Overall patient satisfaction was determined using 2 validated items, 1 adapted from the</p>	<p>Dang BN, Westbrook RA, Black WC, Rodriguez-Barradas MC, Giordano TP. Examining the Link between Patient Satisfaction and Adherence to HIV Care: A Structural Equation Model. <i>PLoS ONE.</i> 2013;8(1):e54729.¹⁰⁷</p>

	<p>CAHPS surveys (“Would you recommend this clinic to other patients with HIV?”) and the other adapted from the Delighted-Terrible Scale (“Overall, how do you feel about the care you got at this clinic in the last 12 months?”). Responses were converted to a 10-point scale. A validated single-item measure was used to assess adherence to HAART over the prior 4 weeks.</p> <p>Individuals who reported “excellent” adherence were significantly more satisfied with their HIV care than those who did not (median patient satisfaction score 10 vs. 8.61, respectively; $p < .001$).</p>	
<p>Cross-sectional study</p>	<p>Investigators compared experience of care reports from 402,593 Medicare Advantage enrollees who died within 1 year of completing the Medicare Advantage CAHPS (MCAHPS) survey to those who did not. 2008 and 2009 MCAHPS survey data were used to assess ratings of 5 areas of care (plan, prescription drug plan, doctor, specialists, overall care) and 5 composite measures of patient experience (getting care quickly, getting needed care, doctor communication, getting drugs, and getting drug information).</p> <p>Investigators used a propensity score-weighted linear regression model that included race and ethnicity, education, an indicator for dual eligibility for Medicaid, 10-level CMS regions, sex, age, chronic conditions, year, proxy help and survey answers by proxy, and self-reported physical and mental health as predictors of death.</p> <p>Using a 100-point scale for experience of care, enrollees in the near-end-of-life group gave higher ratings for their plans (+.6 points; $p = .2$), prescription drug plan (+1.1; $p < .001$), and getting care quickly (+1.5; $p < .001$). There were no measures for which the near-end-of-life group reported significantly worse experiences than those who did not die during the</p>	<p>Elliott MN, Haviland AM, Cleary PD, Zaslavsky AM, Farley DO, Klein DJ, Edwards CA, Beckett MK, Orr N, Saliba D. Care experiences of managed care Medicare enrollees near the end of life. <i>J Am Geriatr Soc.</i> 2013;61(3):407–412. doi:10.1111/jgs.12121.⁹²</p>

	study period.	
Cross-sectional study	<p>Investigators examined (1) whether patient satisfaction is associated with quality of cardiac care as measured by adherence to practice guideline recommendations, (2) whether patient satisfaction is an independent predictor of a hospital's inpatient AMI mortality rate, and (3) which aspects of a patient's interaction with staff and experience with hospital facilities are the most important determinants of overall satisfaction.</p> <p>A total of 205 quarterly observations from 25 U.S. hospitals were included in the study. Clinical care and patient characteristic information were obtained from the Can Rapid Risk Stratification of Unstable Angina Patients Suppress Adverse Outcomes With Early Implementation of the ACC/AHA Guidelines (CRUSADE) quality improvement registry for the years 2001 to 2006. Patient satisfaction data were obtained from Press Ganey patient satisfaction surveys for cardiac admissions during this same time period.</p> <p>Hospital-level overall patient satisfaction was significantly positively correlated with 4 of 14 clinical process measures ($p = .005$ to $.04$). Controlling for a hospital's overall guideline adherence score, higher patient satisfaction scores were associated with lower risk-adjusted inpatient mortality ($p = .02$). One-quartile changes in both patient satisfaction and guideline adherence scores produced similar changes in predicted survival. Satisfaction with nursing care was the most important determinant of overall patient satisfaction ($p < .001$).</p>	<p>Glickman SW, Boulding W, Manary M, Staelin R, Roe MT, Wolosin RJ, Ohman EM, Peterson ED, Schulman KA. Patient satisfaction and its relationship with clinical quality and inpatient mortality in acute myocardial infarction. <i>Circ Cardiovasc Qual Outcomes</i>. 2010;3(2):188–195.⁹</p>
Cross-sectional study	<p>This study examined patients' perception of pain control in U.S. hospitals.</p> <p>Investigators evaluated responses to the Adult HCAHPS survey from patients who were ≥ 18 years old, spent at least one night in the hospital between July 2006 and June 2007, were admitted with a non-</p>	<p>Gupta A, Daigle S, Mojica J, Hurley RW. Patient perception of pain care in hospitals in the United States. <i>J Pain Res</i>. 2009;2:157–164.⁶²</p>

	<p>psychiatric diagnosis, and were alive at the time of discharge. Data were provided by 2,429 hospitals, of which >75% had ≥300 patients who responded to the survey. Patients answered a series of questions about their experiences with pain management.</p> <p>The investigators found that 63% of patients gave a high rating of global satisfaction with their care. Patient satisfaction with pain control was highly correlated with global satisfaction with care ($r>.84$). In addition, patients' relationship with health care staff was highly correlated with pain relief ($r>.85$). Patients' perception of their pain care and their reported level of pain relief varied significantly based on hospital characteristics, including hospital ownership and hospital care acuity, with critical access hospitals and government-owned hospitals receiving the highest ratings for pain relief and satisfaction with pain care.</p>	
Cross-sectional study	<p>Investigators examined the correlation between stroke patients' experiences of hospital care and the quality of services as assessed in a national audit.</p> <p>The study population consisted of 670 patients from 51 English NHS trusts admitted with a primary diagnosis of stroke between April and June 2004. Data were obtained from a patient experience questionnaire and the National Sentinel Stroke Audit 2004.</p> <p>Patient experience scores were positively correlated with audit assessments of the organizational quality of stroke care (Spearman coefficient .32; 95% CI .07 to .53). Better-organized stroke care was associated with more positive patient experiences.</p>	<p>Howell E, Graham C, Hoffman A, Lowe D, McKeivitt C, Reeves R, Rudd AG. Comparison of patients' assessments of the quality of stroke care with audit findings. <i>Qual Saf Health Care</i>. 2007;16(6):450–455.¹⁰⁸</p>
Cross-sectional study	<p>Investigators examined the association between Adult HCAHPS scores for experience of care, medical and surgical process measures, and the prevalence of complications of care.</p>	<p>Isaac T, Zaslavsky AM, Cleary PD, Landon BE. The relationship between patients' perception of care and</p>

	<p>Eligible patients were ≥ 18 years old. Data on patient experience, process measures, and complication prevalence were obtained from year 2007 Adult HCAHPS scores pertaining to care delivered in 2006, the Hospital Quality Alliance (year 2006), and the Agency for Healthcare Research and Quality Patient Safety Indicators (year 2006), respectively.</p> <p>The overall hospital rating and willingness to recommend the hospital were strongly correlated with better technical performance for all medical conditions and surgical services evaluated (correlation coefficient [R] range .15 to .63; $p < .05$). In medical patients, decubitus ulcer rates were negatively correlated with each of the Adult HCAHPS composite measures ($R = -.17$ to $-.35$; $p = .005$ to $p < .001$).</p>	<p>measures of hospital quality and safety. <i>Health Serv Res.</i> 2010;45(4):1024–1040.⁹⁶</p>
<p>Cross-sectional study</p>	<p>Investigators examined hospital-level correlations between severity-adjusted mortality rates and patient satisfaction with 6 dimensions of medical care (physician care, nursing care, information provided, discharge instructions, coordination of care, and overall quality).</p> <p>Eligible patients had 1 of 6 medical conditions (AMI, congestive heart failure, obstructive airway disease, gastrointestinal hemorrhage, pneumonia, or stroke) and were discharged from 29 Ohio hospitals during the period of 1993-1997. Patient satisfaction was assessed using the Patient Judgment System, a validated survey administered to all eligible patients ≥ 18 years old with a medical diagnosis.</p> <p>There were statistically significant correlations between hospital mortality and mean patient satisfaction scores for 3 of the 6 measures: coordination of care (Spearman coefficient: $-.40$; $p = .03$), discharge instructions (Spearman coefficient: $-.39$; $p = .04$), and overall quality (Spearman coefficient: $-.38$; $p =$</p>	<p>Jaipaul CK, Rosenthal GE. Do Hospitals With Lower Mortality Have Higher Patient Satisfaction? A Regional Analysis of Patients With Medical Diagnoses. <i>Am J Med Qual.</i> 2003;18(2):59–65.⁹³</p>

	.04). Hospitals with higher patient satisfaction tended to have lower severity-adjusted mortality rates.	
Cross-sectional study	<p>Investigators assessed whether key hospital characteristics that are thought to enhance patients' experiences are associated with a better experience for patients. They also investigated whether a hospital's performance on the Adult HCAHPS survey was related to its performance on indicators of quality of clinical care.</p> <p>Investigators analyzed Adult HCAHPS data from July 2006 through June 2007. Investigators linked the HCAHPS data to the annual survey of the American Hospital Association, which collects information from hospitals that includes nurse-staffing levels (ratio of nurses to patient-days), profit status, membership in the Council of Teaching Hospitals and Health Systems, number of beds, census region, location, percentage of patients receiving Medicaid, and presence or absence of a medical intensive care unit.</p> <p>Compared with hospitals in the bottom quartile of nurse-staffing levels, those in the top quartile performed better on the Adult HCAHPS survey (e.g., 63.5% vs. 70.2% of patients responded that they "would definitely recommend" the hospital; $p < .001$).</p>	Jha AK, Orav EJ, Zheng J, Epstein AM. Patients' perception of hospital care in the United States. <i>N Engl J Med.</i> 2008;359(18):1921–1931. ¹⁰⁹
Cross-sectional study	<p>Investigators examined the influence of patient-centered care and technical quality of care outcomes for patients with AMI.</p> <p>The study population was a national sample of 1,858 veterans hospitalized for an initial AMI in a Department of Veterans Affairs medical center during the fiscal years 2003 and 2004.</p> <p>Patient perception of patient-centered care was assessed using the inpatient Survey of Healthcare Experiences of Patients. Clinical quality data were obtained from the Veterans</p>	Meterko M, Wright S, Lin H, Lowy E, Cleary PD. Mortality among patients with acute myocardial infarction: the influences of patient-centered care and evidence-based medicine. <i>Health Serv Res.</i> 2010;45(5 Pt 1):1188–1204. ⁹⁴

	<p>Administration External Peer Review Program.</p> <p>After controlling for patient characteristics and technical quality of care, better patient-centered care was associated with a significantly, but modestly, lower hazard of death over the 1-year study period (hazard ratio .992; 95% CI .986 to .998).</p>	
Cross-sectional study	<p>Investigators examined the association between clinical measures of quality and measures of patient experience.</p> <p>Data were analyzed from a statewide cohort of 373 practice sites and a cohort of 118 individual physicians who were part of a large physician organization in Massachusetts. Practice site data were obtained through Massachusetts Health Quality Partners, and individual physician data were obtained from Harvard Vanguard Medical Associates. Patient experience data were obtained from the Ambulatory Care Experiences Survey fielded in 2005.</p> <p>Investigators created 3 composite measures of clinical quality (2 process measure composites and 1 outcome composite) and 7 composite measures of patient experience. Of 28 possible correlations between patient experience and clinical processes of care, 8 were significant and positive, and 2 were significant and negative. The magnitude of positive correlations ranged from .13 to .19 at the site level and from .28 to .51 at the physician level. There were no significant correlations between patient experiences and the clinical outcome composite.</p>	<p>Sequist TD, Schneider EC, Anastario M, Odigie EG, Marshall R, Rogers WH, Safran DG. Quality monitoring of physicians: linking patients' experiences of care to clinical quality and outcomes. <i>J Gen Intern Med.</i> 2008;23(11):1784–1790.¹¹⁰</p>
Cross-sectional study	<p>Investigators examined the association between measures of clinical performance and measures of patient-centered care for patients with chronic conditions.</p> <p>The study population consisted of 51,129 adult patients with a chronic disease. Composite measures of clinical quality,</p>	<p>Sequist TD, Glahn TV, Li A, Rogers WH, Safran DG. Measuring chronic care delivery: patient experiences and clinical performance. <i>Int J Qual Health Care.</i> 2012;24(3):206–213.¹¹¹</p>

	<p>stratified by process and outcome measures, were created using data from administrative and medical records from 89 California medical groups that participated in a statewide performance initiative in 2007. Patient experiences of care were assessed using the CG CAHPS survey. Composite measures of patient experience included quality of clinical interactions, integration of care, office staff, and organizational access.</p> <p>Three of the 10 correlations between patient experience and clinical performance composites were statistically significant. The integration of care patient experience composite had a significant positive correlation with the clinical processes of care and clinical outcomes of care composites. The quality of clinical interactions composite had a significant positive correlation with the clinical processes of care composite.</p>	
<p>Cross-sectional study</p>	<p>Investigators examined the association between patients' perceptions of the quality of care they receive and transplant center outcomes.</p> <p>The study population included 188 transplant centers, representing 15,710 kidney transplants and 95% of the total U.S. kidney transplant population in 2011. Children's hospitals, military and Veterans Administration hospitals, and those missing Adult HCAHPS data were excluded from the study. Data were obtained from the Hospital Compare website and the Scientific Registry of Transplant Recipients (SRTR) website for 2011. HCAHPS results were used to measure patients' experiences of care, while SRTR-reported 1-month and 1-year observed-to-expected event rates for graft loss and patient death were used to evaluate transplant outcomes.</p> <p>Investigators found that overall, better patient experience was associated with better SRTR outcomes. For instance, hospitals that were above the median in</p>	<p>Srinivas R, Chavin KD, Baliga PK, Srinivas T, Taber DJ. Association Between Patient Satisfaction and Outcomes in Kidney Transplant. <i>Am J Med Qual.</i> 2014; Epub ahead of print.¹¹²</p>

	<p>SRTR performance at both 1 month and 1 year, compared with hospitals that were below the median, had higher average HCAHPS scores for overall hospital rating (1 month: 66% vs. 48%, $p = .02$; 1 year: 64% vs. 49%, $p = .38$).</p>	
Cross-sectional study	<p>Investigators studied whether a correlation exists between inpatient experience of care and hospital-acquired injurious fall rates.</p> <p>Patients were from 478 hospitals in California, New York, and Florida. All data were from fiscal year 2007. Patient experience of hospital care was assessed using 7 inpatient Adult HCAHPS measures: communication with nurses, communication with physicians, responsiveness of hospital staff, pain management, communication about medications, cleanliness of the hospital environment, and quietness of the hospital environment.</p> <p>Pearson (r) and Spearman (ρ) correlation analysis showed that higher inpatient satisfaction with cleanliness ($\rho = -.09$) and quietness (r/ρ coefficients ranged from $-.10$ to $-.19$) was correlated with lower injurious fall rates.</p>	<p>Tzeng H-M, Hu HM, Yin C-Y, Johnson D. Link Between Patients' Perceptions of Their Acute Care Hospital Experience and Institutions' Injurious Fall Rates. <i>J Nurs Care Qual April</i>. 2011;26(2):151–160.¹¹³</p>
Commentary	<p>This review article discusses the general importance of patient experience and its relationship to health outcomes.</p> <p>The authors observe that increased patient engagement has been found to lead to lower resource use and greater patient satisfaction. Results for patient experience surveys that focus on a specific hospital visit are consistently correlated with accepted outcome measures, such as mortality and readmission rates, suggesting that patient experience surveys are a valid measure of quality. The authors conclude that when patient-experience surveys address a specific event or visit, focus on provider-patient interactions for all providers, and are assessed in a timely manner, they seem to capture an important and</p>	<p>Manary MP, Boulding W, Staelin R, Glickman SW. The patient experience and health outcomes. <i>N Engl J Med</i>. 2013;368(3):201–203.¹¹⁴</p>

	otherwise unmeasured dimension of care quality.	
Need for Pediatric-Specific Measures of Patient Experience		
Systematic literature review	<p>Investigators performed a systematic literature review to determine what instruments exist for measuring patient and family experience of pediatric health care and which should be included in the core measurement set for assessing Medicaid and the Children's Health Insurance Program (CHIP). They also identified gaps in measure development.</p> <p>Investigators reviewed quality measure databases, including the AHRQ National Quality Measures Clearinghouse, the National Quality Forum endorsed measures, and the National Committee for Quality Assurance Healthcare Effectiveness Data and Information Set. Measures designed only for research purposes, and those designed for use outside of the United States were excluded. The Ovid search engine was used to identify additional instruments.</p> <p>The lack of a publicly accessible inpatient patient experience of care instrument, such as a pediatric version of the Adult CAHPS Hospital Survey, was noted to be a gap in measure development.</p>	<p>Co JPT, Sternberg SB, Homer CJ. Measuring patient and family experiences of health care for children. <i>Acad Pediatr.</i> 2011;11(3 Suppl):S59–67⁵²</p>
Cross-sectional study	<p>Investigators examined differences in reports and ratings of care delivered to adults and children and whether they vary by site. Investigators compared adult and child experiences of care at a large West Coast medical center and affiliated clinics and a large midwestern health plan in 2008 and 2009 using the CG CAHPS 12-month survey.</p> <p>The study population included responses from 15,051 adults and 2,323 parents or caregivers of children from the West Coast site and 7,823 adults and 668 parents or caregivers of children from the midwestern site.</p> <p>Investigators found significant differences in the perception of care for children</p>	<p>Chen AY, Elliott MN, Spritzer KL, Brown JA, Skootsky SA, Rowley C, Hays RD. Differences in CAHPS reports and ratings of health care provided to adults and children. <i>Med Care.</i> 2012;50 Suppl:S35–39.¹¹⁵</p>

	<p>versus adults. Care provided to children tended to be perceived more positively. Differences were also found between regions.</p>	
Cross-sectional study	<p>Investigators compared children's ratings of patient satisfaction with outpatient care to ratings given by parents using the "Satisfaction with Child Healthcare Survey".</p> <p>The study population consisted of 116 children and adolescents who received care at two metropolitan pediatric subspecialty clinics and 115 parents. There was moderate significant correlation between child-teen and parent scores. Parents rated care significantly higher than did their children. Children and teens provide valuable perceptions about care that can help inform clinical improvement processes.</p>	<p>Chesney M, Lindeke L, Johnson L, Jukkala A, Lynch S. Comparison of child and parent satisfaction ratings of ambulatory pediatric subspecialty care. <i>J Pediatr Heal Care Off Publ Natl Assoc Pediatr Nurse Assoc Pr.</i> 2005;19(4):221–229.⁸⁹</p>
Patient Experience as Target for Quality Improvement		
Randomized controlled trial	<p>Investigators examined the effect of a tailored education-coaching (TEC) intervention on patients' ability to effectively discuss pain-related questions, concerns, and preferences with physicians.</p> <p>The study consisted of 148 cancer patients (18 to 80 years old) and 24 physicians in 3 California health systems and 1 private practice. All of the patients had reported pain levels ≥ 4 on a scale of 0 to 10 or pain in the past 2 weeks which interfered at least moderately with normal daily activities.</p> <p>The investigators found that patients in the TEC group discussed their pain concerns with physicians more than did patients in the control group, suggesting that the TEC intervention enhanced patient communication on pain-related issues. Ratings of physician information about pain management were also higher when patients discussed their pain concerns more.</p>	<p>Street RL Jr, Slee C, Kalauokalani DK, Dean DE, Tancredi DJ, Kravitz RL. Improving physician-patient communication about cancer pain with a tailored education-coaching intervention. <i>Patient Educ Couns.</i> 2010;80(1):42–47. doi:10.1016/j.pec.2009.10.009.¹²</p>
Longitudinal cross-sectional study	<p>Investigators conducted a national assessment of changes in patients'</p>	<p>Elliott MN, Lehrman WG, Goldstein EH,</p>

	<p>experiences with inpatient care since the implementation of public reporting of Adult HCAHPS survey results. Data were gathered from Adult HCAHPS surveys reported in March 2008 and March 2009. Overall, 2,774 hospitals collected data permitting public reporting in both March 2008 and March 2009. After adjusting for survey mode and patient characteristics, hospital-level top-box proportions were calculated for the 6 composite measures and 3 individual items from the survey.</p> <p>Eight of the 9 survey measures showed significant improvement from 2008 to 2009 ($p < .01$). Improvement was greatest for discharge information, staff responsiveness, and quietness.</p>	<p>Giordano LA, Beckett MK, Cohea CW, Cleary PD. Hospital survey shows improvements in patient experience. <i>Heal Aff Proj Hope</i>. 2010;29(11):2061–2067.⁴⁵</p>
<p>Cross-sectional study</p>	<p>Investigators conducted a retrospective analysis to determine whether aspects of patient experience that contribute to overall hospital ratings on the Adult HCAHPS survey vary by hospitalization type (HT). Twenty-four HTs were defined using a combination of major diagnostic category and service line (e.g., nervous system, respiratory system, digestive system, infectious disease, injury/poisoning, circulatory, etc., and medical, surgical, or obstetrical service).</p> <p>The study population included 19,720 English- or Spanish-speaking adults with non-psychiatric primary diagnoses. They were discharged between December 2002 and January 2003 after at least one overnight inpatient stay in any of 132 general acute care hospitals in 3 states. Data came from the 2002-2003 Adult HCAHPS 3-state pilot test.</p> <p>Among all of the care components evaluated, communication with nurses had the greatest impact overall on patient hospital ratings across all 24 HTs, with an average correlation with hospital ratings of .34. Communication was also the care component that varied most across HTs in the magnitude of its association with</p>	<p>Elliott MN, Kanouse DE, Edwards CA, Hilborne LH. Components of care vary in importance for overall patient-reported experience by type of hospitalization. <i>Med Care</i>. 2009;47(8):842–849.¹¹⁶</p>

	<p>overall hospital ratings. Pain management was found to be quite important overall and varied significantly across HTs. Hospital environment and staff responsiveness were not found to vary across HTs. Discharge information was found to be the least important dimension overall.</p>	
<p>Cross-sectional study</p>	<p>This study examined gender differences in inpatient experiences and how they vary by dimensions of care and other patient characteristics.</p> <p>Investigators analyzed data from the Adult HCAHPS survey for 1,971,632 patients (medical and surgical service lines) discharged from 3,830 hospitals between July 2007 and June 2008.</p> <p>Women generally reported less positive experiences than men, especially for communication about medicines, discharge information, and cleanliness. The gender gap was generally larger for older patients and for patients with worse self-reported health status. Gender disparities were largest in for-profit hospitals. Investigators concluded that targeting the experiences of women may be a promising means of improving overall patient experience scores.</p>	<p>Elliott MN, Lehrman WG, Beckett MK, Goldstein E, Hambarsoomian K, Giordano LA. Gender differences in patients' perceptions of inpatient care. <i>Health Serv Res.</i> 2012;47(4):1482–1501.¹¹⁷</p>
<p>Qualitative Study</p>	<p>Investigators sought to determine the elements of care on which patients are able to report and to gain insight into patients' perceptions of missed nursing care.</p> <p>Semi-structured face-to-face interviews were conducted with 38 adult (≥18 years old) inpatients in an acute care hospital in the midwestern region of the United States. Interviews were conducted from July to August 2011.</p> <p>Interviews revealed the following three categories of nursing care: (1) fully reportable (e.g., being kept informed), (2) partially reportable (e.g., discharge planning), and (3) not reportable (e.g., IV site care).</p>	<p>Kalisch BJ, McLaughlin M, Dabney BW. Patient perceptions of missed nursing care. <i>Jt Comm J Qual Patient Saf Jt Comm Resour.</i> 2012;38(4):161–167.⁵⁸</p>

	<p>The elements of nursing care that patients identified as frequently missed were mouth care, ambulation, discharge planning, patient education, listening, and being kept informed. Investigators concluded that patients can offer perspectives on a variety of aspects of care if they are aware of their surroundings and mentally able to do so.</p>	
Institute of Medicine Report	<p>The Institute of Medicine (IOM) Committee on the Quality of Health Care in America identified strategies to improve the quality of U.S. health care. Patient-centered care was identified as 1 of 6 targets for improvement that would allow the health care system to better meet patient needs. Patient-centered care was defined as including care that is respectful of and responsive to individual patient preferences, needs, and values, as well as clinical decision making that is guided by patient values. The other targets for improvement include safe, effective, timely, efficient, and equitable care.</p>	<p>Institute of Medicine Committee on the Quality of Health Care in America. <i>Crossing the Quality Chasm: A New Health System for the 21st Century</i>. Washington, D.C.: National Academy Press; 2001.⁹⁸</p>
Institute of Medicine Report	<p>The IOM identified a set of 8 national priority areas for health care quality improvement and disparities elimination. One of these priorities is patient and family engagement, which includes the improvement of patient experience of care by achieving better quality, access, reliability, and transparency of care, making consumers more confident and informed. The other priorities include population health, safety, care coordination, palliative care, overuse, access, and health systems infrastructure capabilities.</p>	<p>Institute of Medicine Committee on the Quality of Health Care in America. <i>Future Directions for the National Healthcare Quality and Disparities Reports</i>. Washington, D.C.: National Academy Press; 2010.⁹⁹</p>
Report	<p>The authors describe the benefits to health care organizations and patients of implementing 10 key strategies for reducing costs and waste while improving outcomes.</p> <p>Hospitals improved patient experience while implementing evidence-based protocols to ensure safe, efficient, and consistent care delivery. They demonstrated that patient-engaged care</p>	<p>Cosgrove DM, Fisher M, Gabow P, Gottlieb G, Halvorson GC, James BC, Kaplan GS, Perlin JB, Petzel R, Steele GD, Toussaint JS. Ten strategies to lower costs, improve quality, and engage patients: the view from leading health system CEOs.</p>

	can be delivered in ways that simultaneously improve quality and reduce costs.	<i>Heal Aff Proj Hope.</i> 2013;32(2):321–327. ²
Report	The authors discuss the content of the Adult HCAHPS survey and how it is used for public reporting on the Hospital Compare website. They describe the principles underlying its development, the included domains, and examples of nursing interventions that have been associated with improved Adult HCAHPS scores.	Long L. Impressing patients while improving HCAHPS. <i>Nurs Manag (Harrow).</i> 2012;43(12):32–37. ¹¹⁸