APPENDIX 3

List of Abstracted Articles

Articles listed in this appendix were abstracted during the preliminary and/or full abstraction stage of the Phase 1 literature review: “Identifying indicators”.

Appendix 3. Abstracted Articles. Preliminary abstraction by clinical domain.

Healthcare Cost and Utilization Project Quality Indicator Literature Review - Table of Clinical Domains

Domain	Citation	Type of Measure
Adverse Events	Bates, et al., 1995. Evaluation of screening criteria for adverse events in medical patients, Med Care, 33, 5, 452-62; Dartnell, et al., 1996. Hospitalisation for adverse events related to drug therapy: incidence, avoidability and costs, Med J Aust, 164, 11, 659-62; Garcia-Martin, et al., 1997. Proportion of hospital deaths associated with adverse events, J Clin Epidemiol, 50, 12, 1319-26;	Adverse Events
Ambulatory Surgery	Owings and Kozak, 1998. Ambulatory and inpatient procedures in the United States, 1996, Vital Health Stat 13, 139, 1-119; Pokras, et al., 1997. Ambulatory and inpatient procedures in the United States, 1994, Vital Health Stat 13, 132, 1-113; Russell, et al., 1996. Acute day hospitalization as an alternative to inpatient treatment, Can J Psychiatry, 41, 10, 629-37;	Utilization
Avoidable Hospitalizations	Billings, et al., 1996. Recent findings on preventable hospitalizations [see comments], Health Aff (Millwood), 15, 3, 239-49; Blustein, et al., 1998. Preventable hospitalizations and socioeconomic status, Health Aff (Millwood), 17, 2, 177-89; Culler, et al., 1998. Factors related to potentially preventable hospitalizations among the elderly, Med Care, 36, 6, 804-17; Fleming, 1995. Primary care, avoidable hospitalization, and outcomes of care: a literature review and methodological approach, Med Care Res Rev, 52, 1, 88-108;	Ambulatory Care Sensitive Conditions

	Josephson and Karcz, 1997. The impact of physician economic incentives on admission rates of patients with ambulatory sensitive conditions: an analysis comparing two managed care structures and indemnity insurance, Am J Manag Care, 3, 1, 49-56; Pappas, et al., 1997. Potentially avoidable hospitalizations: inequalities in rates between US socioeconomic groups, Am J Public Health, 87, 5, 811-6; Parchman and Culler, 1994. Primary care physicians and avoidable hospitalizations [see comments], J Fam Pract, 39, 2, 123-8; Schreiber and Zielinski, 1997. The meaning of ambulatory care sensitive admissions: urban and rural perspectives, J Rural Health, 13, 4, 276-84;	
Benchmarking	Kiefe, et al., 1998. Identifying achievable benchmarks of care: concepts and methodology, Int J Qual Health Care, 10, 5, 443-7; Lagoe, 1998. Special report: mining admissions data. Benchmark admissions identify areas for improvement, Healthc Benchmarks, 5, 6, 81-90;	Benchmarking
Cardiovascular	Arom, et al., 1996. Patient characteristics, safety, and benefits of same-day admission for coronary artery bypass grafting, Ann Thorac Surg, 61, 4, 1136-9; discussion 1139-40; Burns, et al., 1997. Outcomes for older men and women with congestive heart failure, J Am Geriatr Soc, 45, 3, 276-80; Butler, et al., 1998. Frequency of low-risk hospital admissions for heart failure, Am J Cardiol, 81, 1, 41-4; Caputo, et al., 1997. Effect of continuous quality improvement analysis on the delivery of primary percutaneous transluminal coronary angioplasty for acute myocardial infarction, Am J Cardiol, 79, 9, 1159-64 Chin, et al., 1998. Differences among geriatricians, general internists, and cardiologists in the care of patients with heart failure: a cautionary tale of quality assessment, J Am Geriatr Soc, 46, 11, 1349-54;	Utilization

Cesarean Delivery	Aron, et al., 1998. Impact of risk-adjusting cesarean delivery rates when reporting hospital performance, Jama, 279, 24, 1968-72; Bailit, et al., 1999. Risk adjustment for interhospital comparison of primary cesarean rates, Obstet Gynecol, 93, 6, 1025-30; Brumfield, et al., 1998. 72-hour discharge after cesarean delivery: results in a selected Medicaid population, J Matern Fetal Med, 7, 2, 72-5; Keeler, et al., 1997. Adjusting cesarean delivery rates for case mix, Health Serv Res, 32, 4, 511-28; Kazandjian and Lied, 1998. Cesarean section rates: effects of participation in a performance measurement project, Jt Comm J Qual Improv, 24, 4, 187-96;	Utilization
Complications	Iezzoni, et al., 1994. Using administrative data to screen hospitals for high complication rates, Inquiry, 31, 1, 40-55; Iezzoni, et al., 1994. Identifying complications of care using administrative data, Med Care, 32, 7, 700-15; Kuykendall, et al., 1995. Identifying complications and low provider adherence to normative practices using administrative data, Health Serv Res, 30, 4, 531-54; Silber and Rosenbaum, 1997. A spurious correlation between hospital mortality and complication rates: the importance of severity adjustment, Med Care, 35, 10 Suppl, OS77-92;	Complications
-ectomy	Bradbury, et al., 1997. Toward a systems quality paradigm: relating health outcomes, resource expenditures, and appropriateness of **cholecystectomy** patients, Health Serv Manage Res, 10, 4, 231-44; Chang, et al., 1998. Improvement of medical care quality after implementation of a clinical path monitoring program for transurethral **prostatectomy** patients, Eur Urol, 33, 6, 523-8; Eggleston, et al., A retrospective analysis of 6,387 **cholecystectomies**, Med Prog Technol,	Utilization

	21, 2, 85-90; Gillum, 1995. Epidemiology of carotid **endarterectomy** and cerebral arteriography in the United States, Stroke, 26, 9, 1724-8; Klein, et al., 1996. Maintaining quality of care and patient satisfaction with radical **prostatectomy** in the era of cost containment, Urology, 48, 2, 269-76; Kraiss, et al., 1995. Short-stay carotid **endarterectomy** is safe and cost-effective, Am J Surg, 169, 5, 512-5; Pitt, 1995. Laparoscopic **cholecystectomy**. The Maryland experience, Surg Endosc, 9, 11, 1224-5;	
Geographic Variation	Alexander, et al., 1999. Do market-level hospital and physician resources affect small area variation in hospital use?, Med Care Res Rev, 56, 1, 94-117; Ashton, et al., 1999. Geographic variations in utilization rates in Veterans Affairs hospitals and clinics [see comments], N Engl J Med, 340, 1, 32-9; Hendryx and Rohland, 1994. A small area analysis of psychiatric hospitalizations to general hospitals. Effects of community mental health centers [see comments], Gen Hosp Psychiatry, 16, 5, 313-8; Morris and Munasinghe, 1994. Geographic variability in hospital admission rates for respiratory disease among the elderly in the United States, Chest, 106, 4, 1172-81;	Utilization
High Volume	Begg, et al., 1998. Impact of hospital volume on operative mortality for major cancer surgery [see comments], Jama, 280, 20, 1747-51; Birkmeyer, et al., 1999. Effect of hospital volume on in-hospital mortality with pancreaticoduodenectomy, Surgery, 125, 3, 250-6; Choti, et al., 1998. Should hepatic resections be performed at high-volume referral centers?, J Gastrointest Surg, 2, 1, 11-20;	Volume-Outcome

	Gordon, et al., 1999. Complex gastrointestinal surgery: impact of provider experience on clinical and economic outcomes, J Am Coll Surg, 189, 1, 46-56; Hamilton and Ho, 1998. Does practice make perfect? Examining the relationship between hospital surgical volume and outcomes for hip fracture patients in Quebec, Med Care, 36, 6, 892-903; Kreder, et al., 1998. Are complication rates for elective primary total hip arthroplasty in Ontario related to surgeon and hospital volumes? A preliminary investigation, Can J Surg, 41, 6, 431-7; Lavernia and Guzman, 1995. Relationship of surgical volume to short-term mortality, morbidity, and hospital charges in arthroplasty, J Arthroplasty, 10, 2, 133-40; Manheim, et al., 1998. Hospital vascular surgery volume and procedure mortality rates in California, 1982-1994, J Vasc Surg, 28, 1, 45-56; discussion 56-8; Norton, et al., 1998. The effect of hospital volume on the in-hospital complication rate in knee replacement patients [see comments], Health Serv Res, 33, 5 Pt 1, 1191-210; Phibbs, et al., 1996. The effects of patient volume and level of care at the hospital of birth on neonatal mortality, Jama, 276, 13, 1054-9; Phillips, et al., 1995. The association of hospital volumes of percutaneous transluminal coronary angioplasty with adverse outcomes, length of stay, and charges in California, Med Care, 33, 5, 502-14; Phillips and Luft, 1997. The policy implications of using hospital and physician volumes as "indicators" of quality of care in a changing health care environment, Int J Qual Health Care, 9, 5, 341-8; Solomon, et al., 1996. Relationship between the volume of craniotomies for cerebral aneurysm performed at New York state hospitals and in-hospital mortality, Stroke, 27, 1, 13-7;	

	Thiemann, et al., 1999. The association between hospital volume and survival after acute myocardial infarction in elderly patients [see comments], N Engl J Med, 340, 21, 1640-8;	
Hip fracture	Beringer, et al., 1996. Audit of surgical delay in relationship to outcome after proximal femoral fracture, Ulster Med J, 65, 1, 32-8; Pocock, et al., 1999. The potential effect on hip fracture incidence of mass screening for osteoporosis [see comments], Med J Aust, 170, 10, 486-8;	Utilization
Hospital Stratification	Ansari, et al., 1996. Establishing thresholds for adverse patient outcomes, Int J Qual Health Care, 8, 3, 223-30; Boscarino, 1996. Patients' perception of quality hospital care and hospital occupancy: are there biases associated with assessing quality care based on patients' perceptions?, Int J Qual Health Care, 8, 5, 467-77;	Structure
ICU readmissions	Cooper, et al., 1999. Are readmissions to the intensive care unit a useful measure of hospital performance?, Med Care, 37, 4, 399-408; Darchy, et al., 1999. Iatrogenic diseases as a reason for admission to the intensive care unit: incidence, causes, and consequences, Arch Intern Med, 159, 1, 71-8; Dexter, et al., 1996. Surgical ICU underutilization does not significantly discourage discharge, Health Serv Manage Res, 9, 4, 238-42;	Utilization
Length of stay	Chen and Naylor, 1994. Variation in hospital length of stay for acute myocardial infarction in Ontario, Canada, Med Care, 32, 5, 420-35; Edward-Chandran, et al., 1996. Reduction of length of stay in an acute care psychiatric unit [published erratum appears in Can J Psychiatry 1996 Jun;41(5):319] [see comments], Can J Psychiatry, 41, 1, 49-51; Gross, et al., 1997. Severity adjustment for length of stay: is it always necessary?, Clin Perform Qual Health Care, 5, 4, 169-72;	Utilization

	Kogan, et al., 1998. Length of stay for specialized pediatric urologic care, Arch Pediatr Adolesc Med, 152, 11, 1126-31; Liebergall, et al., 1999. Preadmission screening of patients scheduled for hip and knee replacement: impact on length of stay, Clin Perform Qual Health Care, 7, 1, 17-22; Philbin and Roerden, 1997. Longer hospital length of stay is not related to better clinical outcomes in congestive heart failure, Am J Manag Care, 3, 9, 1285-91; Philbin, et al., 1997. The relationship between hospital length of stay and rate of death in heart failure, Heart Lung, 26, 3, 177-86; Riegel, et al., 1996. Effectiveness of a program of early hospital discharge of cardiac surgery patients [see comments] [published erratum appears in J Cardiovasc Nurs 1997 Apr;11(3):1], J Cardiovasc Nurs, 11, 1, 63-75; Silber, et al., 1999. Conditional Length of Stay, Health Serv Res, 34, 1 Pt 2, 349-63; Thomas, et al., Is patient length of stay related to quality of care?, Hosp Health Serv Adm, 42, 4, 489-507;	
Mortality	Hinchey, et al., 1998. Is in-hospital stroke mortality an accurate measure of quality of care? [see comments], Neurology, 50, 3, 619-25; Iezzoni, et al., 1994. Chronic conditions and risk of in-hospital death, Health Serv Res, 29, 4, 435-60; Khuri, et al., 1997. Risk adjustment of the postoperative mortality rate for the comparative assessment of the quality of surgical care: results of the National Veterans Affairs Surgical Risk Study, J Am Coll Surg, 185, 4, 315-27; Rosenthal, et al., 1998. Variations in standardized hospital mortality rates for six common medical diagnoses: implications for profiling hospital quality, Med Care, 36, 7, 955-64; Thomas and Hofer, 1998. Research evidence on the validity of risk-adjusted mortality rate	In-hospital Mortality

	as a measure of hospital quality of care [published erratum appears in Med Care Res Rev 1999 Mar;56(1):118], Med Care Res Rev, 55, 4, 371-404; Thomas and Hofer, 1999. Accuracy of risk-adjusted mortality rate as a measure of hospital quality of care, Med Care, 37, 1, 83-92;	
Neonatal Early Discharge	Behram, et al., 1998. Implementation of early discharges after uncomplicated vaginal deliveries: maternal and infant complications [see comments], South Med J, 91, 6, 541-5; Bragg, et al., 1997. The effect of early discharge after vaginal delivery on neonatal readmission rates, Obstet Gynecol, 89, 6, 930-3; Britton, et al., 1994. Early discharge of the term newborn: a continued dilemma, Pediatrics, 94, 3, 291-5; Britton, 1998. Postpartum early hospital discharge and follow-up practices in Canada and the United States, Birth, 25, 3, 161-8; Cruz, et al., 1997. Early hospital discharge of preterm very low birth weight infants, J Perinatol, 17, 1, 29-32; Grullon and Grimes, 1997. The safety of early postpartum discharge: a review and critique, Obstet Gynecol, 90, 5, 860-5; Kotagal, et al., 1997. Use of hospital-based services in the first three months of life: impact of an early discharge program, J Pediatr, 130, 2, 250-6; Lee, et al., 1995. Association between duration of neonatal hospital stay and readmission rate [see comments], J Pediatr, 127, 5, 758-66; Liu, et al., 1997. The safety of newborn early discharge. The Washington State experience [see comments] [published erratum appears in JAMA 1997 Dec 17;278(23):2067], Jama, 278, 4, 293-8; Margolis, 1995. A critical review of studies of newborn discharge timing, Clin Pediatr	Length of Stay

	(Phila), 34, 12, 626-34; Welsh and Ludwig-Beymer, 1998. Shortened lengths of stay: ensuring continuity of care for mothers and babies, Lippincotts Prim Care Pract, 2, 3, 284-91;	
Nursing	Blecke and Decker, 1997. ANA quality indicators: meaningful measurement, Mich Nurse, 70, 9, 9-10; Canavan, 1996. ANA/C pioneers project to develop quality indicators, Am Nurse, 28, 6, 19; Lynn and Moore, 1997. Relationship between traditional quality indicators and perceptions of care, Semin Nurse Manag, 5, 4, 187-93;	Utilization
Patient Satisfaction	Cleary and Edgman-Levitan, 1997. Health care quality. Incorporating consumer perspectives, Jama, 278, 19, 1608-12; Scholte op Reimer, et al., 1996. Patients' satisfaction with care after stroke: relation with characteristics of patients and care, Qual Health Care, 5, 3, 144-50;	Satisfaction
Pediatric - Admissions	Bertolino and Gessner, 1999. Pediatric admissions by family physicians and pediatricians in a semirural environment: implications for residency training, J Am Board Fam Pract, 12, 2, 128-32; Chabra, et al., 1997. Hospital use by pediatric patients: implications for change, Am J Prev Med, 13, 6 Suppl, 30-7; Dugdale, 1996. Patterns of disease among children: a simple and versatile measure of child health in communities, J Paediatr Child Health, 32, 5, 400-4; Gadomski, et al., 1998. Impact of a Medicaid primary care provider and preventive care on pediatric hospitalization, Pediatrics, 101, 3, E1; Goodman, et al., 1994. Why are children hospitalized? The role of non-clinical factors in pediatric hospitalizations, Pediatrics, 93, 6 Pt 1, 896-902;	Utilization

	Mangione-Smith and McGlynn, 1998. Assessing the quality of healthcare provided to children, Health Serv Res, 33, 4 Pt 2, 1059-90; Schuster, et al., 1997. Development of a quality of care measurement system for children and adolescents. Methodological considerations and comparisons with a system for adult women [see comments], Arch Pediatr Adolesc Med, 151, 11, 1085-92; Schwartz, et al., 1999. Administrative data for quality improvement, Pediatrics, 103, 1 Suppl E, 291-301;	
Pediatric - Asthma	Ali and Osberg, 1997. Differences in follow-up visits between African American and white Medicaid children hospitalized with asthma, J Health Care Poor Underserved, 8, 1, 83-98; Goodman, et al., 1998. Trends in pediatric asthma hospitalization rates: regional and socioeconomic differences, Pediatrics, 101, 2, 208-13; Homer, et al., 1996. Does quality of care affect rates of hospitalization for childhood asthma?, Pediatrics, 98, 1, 18-23; McConnochie, et al., 1997. Socioeconomic variation in asthma hospitalization: excess utilization or greater need?, Pediatrics, 103, 6, e75; Payne, et al., 1995. Variations in pediatric pneumonia and bronchitis/asthma admission rates. Is appropriateness a factor?, Arch Pediatr Adolesc Med, 149, 2, 162-9; To, et al., 1996. A cohort study on childhood asthma admissions and readmissions, Pediatrics, 98, 2 Pt 1, 191-5;	Ambulatory Care Sensitive
Pediatric – Diagnostic Clusters	McConnochie, et al., 1997. Avoidable morbidity in infants. A classification based on diagnoses in administrative databases, Med Care, 35, 3, 237-54; McConnochie, et al., 1998. Diagnostic clusters in infants as child health outcomes. Variation among socioeconomic areas in one community, Eval Health Prof, 21, 3, 332-61;	Complication

Pediatric - Gastroenteritis	Ardern and Lennon, 1997. Rotavirus gastroenteritis: is vaccine prevention near at hand?, N Z Med J, 110, 1055, 407-9; Conway and Newport, 1994. Are all hospital admissions for acute gastroenteritis necessary?, J Infect, 29, 1, 5-8; Elliott, et al., 1996. Pre-admission management of acute gastroenteritis [see comments], J Paediatr Child Health, 32, 1, 18-21; To, et al., 1996. Hospitalization rates of children with gastroenteritis in Ontario, Can J Public Health, 87, 1, 62-5;	Ambulatory Care Sensitive
Pediatrics-Tonsillectomy	Lalakea, et al., 1999. Safety of pediatric short-stay tonsillectomy, Arch Otolaryngol Head Neck Surg, 125, 7, 749-52;	Utilization
Perforated Ulcer	Kong, et al., 1998. Prevalence and cost of hospitalization for gastrointestinal complications related to peptic ulcers with bleeding or perforation: comparison of two national databases, Am J Manag Care, 4, 3, 399-409;	Complication
Pneumonia	Hand, et al., 1997. Mortality and length of stay as performance indicators for pneumonia in the elderly, J Investig Med, 45, 4, 183-90; Meehan, et al., 1997. Quality of care, process, and outcomes in elderly patients with pneumonia [see comments], Jama, 278, 23, 2080-4; Minogue, et al., 1998. Patients hospitalized after initial outpatient treatment for community- acquired pneumonia, Ann Emerg Med, 31, 3, 376-80; Murphy, et al., 1999. A multihospital effort to reduce inpatient lengths of stay for pneumonia, J Nurs Care Qual, 13, 5, 11-23;	Mortality Length-of-stay Ambulatory Care Sensitive Condition
Psychiatric	Ettner and Hermann, 1998. Inpatient psychiatric treatment of elderly Medicare beneficiaries, Psychiatr Serv, 49, 9, 1173-9; Fortney, et al., 1996. Variation among VA hospitals in length of stay for treatment of	Length-of-stay

	depression, Psychiatr Serv, 47, 6, 608-13; Johnstone and Zolese, 1999. Systematic review of the effectiveness of planned short hospital stays for mental health care, Bmj, 318, 7195, 1387-90; Kelly, et al., 1998. Factors in delays in discharge from acute-care psychiatry, Can J Psychiatry, 43, 5, 496-501;	
Psychiatric – Dual Diagnosis	Ames and Tuckwell, 1994. Psychiatric disorders among elderly patients in a general hospital, Med J Aust, 160, 11, 671-5; Appleby, et al., 1997. The impact of substance use screening on a public psychiatric inpatient population, Psychiatr Serv, 48, 10, 1311-6; Barrett, et al., 1998. Implementing and evaluating outcome indicators of performance for mental health agencies, J Healthc Qual, 20, 3, 6-13; quiz 52; Blixen, et al., 1997. Dual diagnosis in elders discharged from a psychiatric hospital, Int J Geriatr Psychiatry, 12, 3, 307-13; Bradley and Zarkin, 1997. An inpatient profile of patients with a substance abuse diagnosis in Maryland, J Subst Abuse Treat, 14, 2, 155-62; Chung, et al., 1995. Racial differences in treatment of psychiatric inpatients, Psychiatr Serv, 46, 6, 586-91; Cohen, et al., 1994. Rates and correlates of suicide attempts in first-admission psychotic patients, Acta Psychiatr Scand, 90, 3, 167-71; Gerke, et al., 1997. Alcohol-related diseases in general hospital patients, Alcohol Alcohol, 32, 2, 179-84; Koenig, 1998. Depression in hospitalized older patients with congestive heart failure, Gen Hosp Psychiatry, 20, 1, 29-43;	Screening

	Koenig and Kuchibhatla, 1999. Use of health services by medically ill depressed elderly patients after hospital discharge, Am J Geriatr Psychiatry, 7, 1, 48-56; Piazza, 1996. Dual diagnosis and adolescent psychiatric inpatients, Subst Use Misuse, 31, 2, 215-23;	
Psychiatric - Mortality	Amaddeo, et al., 1995. Mortality among patients with psychiatric illness. A ten-year case register study in an area with a community-based system of care, Br J Psychiatry, 166, 6, 783-8; Ganesvaran and Shah, 1997. Psychiatric in-patient suicide rates: a 21-year study, Med Sci Law, 37, 3, 202-9; Rossler, et al., 1995. Excess mortality among elderly psychiatric in-patients with organic mental disorder, Br J Psychiatry, 167, 4, 527-32;	In-hospital Mortality
Readmissions	Ashton, et al., 1995. The association between the quality of inpatient care and early readmission: a meta-analysis of the evidence, Med Care, 35, 10, 1044-59; Beggs, et al., 1996. Factors related to rehospitalization within thirty days of discharge after coronary artery bypass grafting, Best Pract Benchmarking Healthc, 1, 4, 180-6; Camberg, et al., 1997. Discharge destination and repeat hospitalizations, Med Care, 35, 8, 756-67; Hofer and Hayward, 1995. Can early re-admission rates accurately detect poor-quality hospitals?, Med Care, 33, 3, 234-45;	Utilization
Rehabilitation	Cohen, et al., 1997. The development of an outcomes management system for acute medical rehabilitation, Am J Med Qual, 12, 1, 28-32;	Rehabilitation
Reporting of Quality Indicators	Aiken and Sloane, 1998. Advances in hospital outcomes research, J Health Serv Res Policy, 3, 4, 249-50; Appleby, 1998. Data briefing. Performance indicators, Health Serv J, 108, 5625, 39;	Quality Indicators

	Appleby, 1998. Data briefing. Performance framework, Health Serv J, 108, 5590, 34-5; Bradley, et al., 1998. Monitoring clinical quality in Medicaid managed care, Conn Med, 62, 4, 215-20; Chassin, 1998. Is health care ready for Six Sigma quality?, Milbank Q, 76, 4, 565-91, 510; Epstein, 1998. Rolling down the runway: the challenges ahead for quality report cards, Jama, 279, 21, 1691-6; Eddy, 1998. Performance measurement: problems and solutions [see comments], Health Aff (Millwood), 17, 4, 7-25; Iezzoni, 1997. Assessing quality using administrative data, Ann Intern Med, 127, 8 Pt 2, 666-74; Kazandjian, et al., 1996. Do performance indicators make a difference?, Jt Comm J Qual Improv, 22, 7, 482-91;	
Severity Adjustment	Asenjo, et al., 1994. Relationship between severity, costs and claims of hospitalized patients using the Severity of Illness Index, Eur J Epidemiol, 10, 5, 625-32; Daley, et al., 1997. Risk adjustment of the postoperative morbidity rate for the comparative assessment of the quality of surgical care: results of the National Veterans Affairs Surgical Risk Study, J Am Coll Surg, 185, 4, 328-40; DesHarnais, et al., 1997. Risk-adjusted quality outcome measures: indexes for benchmarking rates of mortality, complications, and readmissions, Qual Manag Health Care, 5, 2, 80-7; DesHarnais, et al., 1997. How to use risk-adjusted quality indicators to assess hospitals, QRC Advis, 13, 5, 1, 6-8; Goldfield, et al., 1999. The prospective risk adjustment system, J Ambulatory Care	Risk-Adjustment

	Manage, 22, 2, 41-52; Grana, et al., 1997. Measuring the quality of inpatient health care, Qual Manag Health Care, 6, 1, 61-9; Iezzoni, 1997. The risks of risk adjustment [see comments], Jama, 278, 19, 1600-7; Ingber, 1998. The current state of risk adjustment technology for capitation, J Ambulatory Care Manage, 21, 4, 1-28; Krumholz, et al., 1999. Comparing AMI mortality among hospitals in patients 65 years of age and older: evaluating methods of risk adjustment, Circulation, 99, 23, 2986-92; Polanczyk, et al., 1998. A new casemix adjustment index for hospital mortality among patients with congestive heart failure, Med Care, 36, 10, 1489-99;	
Spine Surgery	Davis, 1994. Increasing rates of cervical and lumbar spine surgery in the United States, 1979-1990, Spine, 19, 10, 1117-23; discussion 1123-4;	Utilization
Trauma	Amatangelo, et al., 1997. Analysis of patients discharged from receiving hospitals within 24 hours of air medical transport, Air Med J, 16, 2, 44-6; discussion 47; Ary, et al., 1996. The increasing burden of pediatric firearm injuries on the emergency department, Pediatr Emerg Care, 12, 6, 391-3; Ashbaugh, et al., 1995. The Ohio Bicycle Injury Study, Clin Pediatr (Phila), 34, 5, 256-60; Baker, et al., Demographic factors in a population-based survey of hospitalized, work-related, ocular injury, Am J Ophthalmol, 122, 2, 213-9; Barillo, et al., 1995. Thermal trauma resulting from motor vehicle operation or maintenance, Accid Anal Prev, 27, 6, 829-33;	Utilization
Urological Surgery	Chang, et al., 1999. Effects of implementation of 18 clinical pathways on costs and quality of care among patients undergoing urological surgery, J Urol, 161, 6, 1858-62;	Utilization

Validation of Quality Indicators	Boscarino and Chang, 1997. Commentary: inaccurate data on the quality of care may do more harm than good--an alternative approach is required, Am J Med Qual, 12, 4, 196-200; Hofer, et al., Validating quality indicators for hospital care, Jt Comm J Qual Improv, 23, 9, 455-67; Huff, 1997. Comprehensive reliability assessment and comparison of quality indicators and their components, J Clin Epidemiol, 50, 12, 1395-404; Mayer-Oakes and Barnes, 1997. Developing indicators for the Medicare Quality Indicator System (MQIS): challenges and lessons learned, Jt Comm J Qual Improv, 23, 7, 381-90; McGlynn, 1998. Choosing and evaluating clinical performance measures, Jt Comm J Qual Improv, 24, 9, 470-9; McGlynn and Asch, 1998. Developing a clinical performance measure, Am J Prev Med, 14, 3 Suppl, 14-21; Romano and Mark, 1994. Bias in the coding of hospital discharge data and its implications for quality assessment, Med Care, 32, 1, 81-90; Salzer, et al., 1997. Validating quality indicators. Quality as relationship between structure, process, and outcome, Eval Rev, 21, 3, 292-309;	Quality Indicators
Wound Infection	Hall, et al., 1998. The time of presentation of wound infection after cardiac surgery [see comments], J Qual Clin Pract, 18, 4, 227-31; Lapsley and Vogels, 1998. Quality and cost impacts: prevention of post-operative clean wound infections, Int J Health Care Qual Assur Inc Leadersh Health Serv, 11, 6-7, 222-31; Majoor, et al., 1999. The extraction of quality-of-care clinical indicators from State health department administrative databases, Med J Aust, 170, 9, 420-4; Platell and Hall, 1997. The role of wound infection as a clinical indicator after colorectal surgery, J Qual Clin Pract, 17, 4, 203-7;	Complications

Appendix 3. Full abstraction articles

1. Ansari MZ, Collopy BT, McDonald IG. Establishing thresholds for adverse patient outcomes. Int J Qual Health Care 1996;8:223-30.
2. Ashton CM, Del Junco DJ, Souchek J, Wray NP, Mansyur CL. The association between the quality of inpatient care and early readmission: a meta-analysis of the evidence. Med Care 1997;35:1044-59.
3. Bates DW, O'Neil AC, Petersen LA, Lee TH, Brennan TA. Evaluation of screening criteria for adverse events in medical patients. Med Care 1995;33:452-62.
4. Bradley EH, Horwitz SM, Grogan CM, Roberto M. Monitoring clinical quality in Medicaid managed care. Conn Med 1998;62:215-20.
5. Butler J, Hanumanthu S, Chomsky D, Wilson JR. Frequency of low-risk hospital admissions for heart failure. Am J Cardiol 1998;81:41-4.
6. Chang PL, Wang TM, Huang ST, Hsieh ML, Tsui KH, Lai RH. Effects of implementation of 18 clinical pathways on costs and quality of care among patients undergoing urological surgery. J Urol 1999;161:1858-62.
7. Choti MA, Bowman HM, Pitt HA, et al. Should hepatic resections be performed at high-volume referral centers? J Gastrointest Surg 1998;2:11-20.
8. Conway SP, Newport MJ. Are all hospital admissions for acute gastroenteritis necessary? J Infect 1994;29:5-8.
9. Cooper GS, Sirio CA, Rotondi AJ, Shepardson LB, Rosenthal GE. Are readmissions to the intensive care unit a useful measure of hospital performance? Med Care 1999;37:399-408.
10. Elliott EJ, Backhouse JA, Leach JW. Pre-admission management of acute gastroenteritis [see comments]. J Paediatr Child Health 1996;32:18-21.
11. Gadomski A, Jenkins P, Nichols M. Impact of a Medicaid primary care provider and preventive care on pediatric hospitalization. Pediatrics 1998;101:E1.
12. Hand R, Klemka-Walden L, Inczauskis D. Mortality and length of stay as performance indicators for pneumonia in the elderly. J Investig Med 1997;45:183-90.
13. Hofer TP, Hayward RA. Can early re-admission rates accurately detect poor-quality hospitals? Med Care 1995;33:234-45.
14. Hofer TP, Bernstein SJ, Hayward RA, DeMonner S. Validating quality indicators for hospital care. Jt Comm J Qual Improv 1997;23:455-67.
15. Homer CJ, Szilagyi P, Rodewald L, et al. Does quality of care affect rates of hospitalization for childhood asthma? Pediatrics 1996;98:18-23.
16. Iezzoni LI, Shwartz M, Ash AS, Mackiernan YD. Using severity measures to predict the likelihood of death for pneumonia inpatients. J Gen Intern Med 1996;11:23-31.
17. Khuri SF, Daley J, Henderson W, et al. Risk adjustment of the postoperative mortality rate for the comparative assessment of the quality of surgical care: results of the National Veterans Affairs Surgical Risk Study. J Am Coll Surg 1997;185:315-27.
18. Klein EA, Grass JA, Calabrese DA, Kay RA, Sargeant W, O'Hara JF. Maintaining quality of care and patient satisfaction with radical prostatectomy in the era of cost containment. Urology 1996;48:269-76.
19. Majoor JW, Ibrahim JE, Cicuttini FM, Boyce NW, McNeil JJ. The extraction of quality-of-care clinical indicators from State health department administrative databases. Med J Aust 1999;170:420-4.
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