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<td>1</td>
<td>1</td>
<td>Methodology manual from the ACC/AHA Task Force on Practice Guidelines</td>
<td><a href="http://circ.ahajournals.org/content/126/1/5.full.pdf+html">http://circ.ahajournals.org/content/126/1/5.full.pdf+html</a></td>
<td>Methods included in the Task Force for writing clinical practice guidelines and appraising evidence for recommendations.</td>
<td>N/A</td>
<td>Support document to accompany the Guideline.</td>
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<tr>
<td>4</td>
<td>1 / A / 2</td>
<td>Document disability; Seattle Angina Questionnaire tool</td>
<td>Marrie J. Seattle Angina Questionnaire - 1999-2014.</td>
<td><a href="http://www.ccsg.ca/images/Guidelines/SAQ-1999-2014.pdf">http://www.ccsg.ca/images/Guidelines/SAQ-1999-2014.pdf</a></td>
<td>Three instruments for the assessment of quality of life, the Seattle Angina Questionnaire (SAQ), the Short Form Health Survey (SF-36), and the Quality of Life Index-Cardiac Version III (QLI) demonstrated the greatest sensitivity to angina classification and were the easiest to use for both patients and investigators.</td>
<td>N/A</td>
<td>Contact of the SAQ.</td>
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<tr>
<td>5</td>
<td>1 / A / 2</td>
<td>Document disability; Seattle Angina Questionnaire</td>
<td>Dougherty CM, Dehwah T, Nieschlag R, Spectra S. Comparison of three quality of life instruments in stable angina patients: Seattle Angina Questionnaire, Short Form Health Survey (SF-36), and Quality of Life Index-Cardiac Version III (QLI). Circulation. 1998 Dec 15;98(25):769-75. PMID: 986468.</td>
<td>Request copy at local library.</td>
<td>N/B</td>
<td>Overall, the SAQ demonstrated the greatest sensitivity to angina classification and was the easiest to use for both patients and investigators.</td>
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Cardiovascular risk assessment guidelines


Cardiovascular risk calculator


http://circ.ahajournals.org/content/126/25/e354.full.pdf+html

Tier-3 Source

Consensus document from numerous national specialty societies, produced by application of the Delphi Method and supported by review of evidence.

→ Consensus-based appropriate use criteria for coronary revascularization.
16 (C) (2) b 2012 ACCF/AHA/ACP/AATS/PCNA/SCAI/STS guideline for the diagnosis and treatment of coronary artery disease. Summary of recommendations for lifestyle management.  

- Physical activity: 
  - Summary: Lifestyle management for cardiovascular disease.  
  - Supports physical activity as part of therapy for patients with stable angina.  
  - Supports discontinuation of smoking as a means for reducing death due to coronary artery disease.  

17 (C) (3) Physical activity  

- Physical activity: 
  - Summary: Lifestyle management for cardiovascular disease.  
  - Supports physical activity as part of therapy for patients with stable angina.  
  - Supports discontinuation of smoking as a means for reducing death due to coronary artery disease.  

18 (C) (4) Alcohol use  

- Alcohol use: 
  - Summary: Lifestyle management for cardiovascular disease.  
  - Supports physical activity as part of therapy for patients with stable angina.  
  - Supports discontinuation of smoking as a means for reducing death due to coronary artery disease.  

19 (C) (5) Smoking cessation  

- Smoking cessation: 
  - Summary: Lifestyle management for cardiovascular disease.  
  - Supports physical activity as part of therapy for patients with stable angina.  
  - Supports discontinuation of smoking as a means for reducing death due to coronary artery disease.  

20 (C) (6) Diabetes management  

- Diabetes management: 
  - Summary: Lifestyle management for cardiovascular disease.  
  - Supports physical activity as part of therapy for patients with stable angina.  
  - Supports discontinuation of smoking as a means for reducing death due to coronary artery disease.
I / C / 7

Professional society guideline. See text for appraisals for specific recommendations.

http://circ.ahajournals.org/content/126/25/25.full.pdf+html  
Provides recommendations related to education concerning recognition and management of stress and depression.

 OBJECTIVE: To evaluate the psychometric properties of a single-item depression screen against validated scoring algorithms for the Patient Health Questionnaire (PHQ) and the utility of these algorithms in screening for depression and suicidality in a Department of Veterans Affairs (VA) primary care setting. STUDY DESIGN: Recruitment phase of a randomized trial. METHODS: A total of 1221 Portland VA patients with upcoming primary care clinic appointments were administered telephone and a single item assessing depressed mood and suicidality over the past year and the PHQ. The PHQ-9 items encompass DSM-IV criteria for major depression, the PHQ-2 (2 items) excludes the thoughts of death or suicide, and the PHQ-2 (2 items) assesses depressed mood and suicidality. Patients whose responses suggested potential suicidality were administered two additional items assessing suicidal ideation. Patients receiving mental health specialty care were excluded. RESULTS: Using the PHQ-2 algorithm for major depression as the reference standard, the VA single item screen was specific (88%) but less sensitive (78%). A PHQ-2 score of 0 or 1 demonstrated similar specificity (93%) with high sensitivity (78%) for case finding. The PHQ-9 was similar to the PHQ-2. Approximately 20% of patients screened positive for moderate depression, 7% reported thoughts of death or suicide, 2% reported thoughts of harming themselves, and 2% had specific plans. CONCLUSIONS: The PHQ-2 offers brevity and better psychometric properties for depression screening than the single-item screen. The PHQ-9 item assessing thoughts of death or suicide does not improve depression case finding; however, one third of patients endorsing this item reported recent active suicidal ideation.

I / C / 9

26 Psychological factors; Screening for Dementia; Randomized, controlled trial testing the benefit of stress management program versus no stress management program. Follow-up was incomplete for 20-30% of patients and study did not include women.  

Surgical patients with dementia. Further efforts are needed to determine specific protocols for health care teams serving this population.

26 Retrospective cohort study of the Taiwan National Health Insurance Research Database suggests that for patients undergoing surgical procedures, those with dementias have a higher rate of postoperative complications.

26 Provides recommendations related to education concerning recognition and management of stress and depression.

26 Using the PHQ-2 as a reference standard, this study compared utility of shorter tests: a single question depression screen versus the PHQ-2. The PHQ-2 was superior, demonstrating similar sensitivity and specificity to the PHQ-9.

26 Mental health screening tool. Mentis is an instrument for screening for cognitive impairment, validated study cohort in patients undergoing hip surgery for displaced femoral neck fracture.
Epidemic Immunization

Influenza immunization

Rosendorff C, Lackland DT, Allison M, Aronow WS, Black HR, Blumenthal RS, Lipid management;

Professional society guideline. See text for appraisals for individual medications.

Anti-platelet therapy

See text for appraisals for specific recommendations.NIH guideline.

Professional society guideline.

Blood pressure; JNC8

JAMA. 2014 Feb 5;311(5):507-20. PMID: 24352797


Tier-2 Source

Supports use of anti-platelet therapy.

Proposes new risk calculation

Tier-2 Source

Supports annual influenza vaccination for patients with SIHD.

Tier-2 Source

Proposes new risk calculation

Tier-2 Source

Supports the use of statins in patients undergoing CABG surgery.

Tier-2 Source

See text for appraisal for specific recommendations.

Professional society guideline.

Tier-2 Source

No Tier-2 guideline.

Tier-2 Source

Professional society guideline. See text for appraisal for individual medications.

Supports use of anti-platelet therapy.
Beta-blocker therapy


PMID: 22166211

Supports use of beta-blocker therapy.

Syntax Score


PMID: 22166211

Supports use of renin-angiotensin aldosterone blockers.

Heart team


It used to be that the cardiologist would act as gatekeeper for percutaneous coronary intervention and coronary artery bypass grafting. In contrast, the concept of the heart team is being advocated whereby a surgeon, interventionalist, cardiologist and other specialists as required work together to decide on needed treatment.

Review here about the genesis of the Heart Team, its advantages and limitations, and find a review of risk scores and how a model can help guide decision making.

Interventions


The American College of Cardiology Foundation (ACCF), Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, and the American Association for Thoracic Surgery, in collaboration with the American Heart Association, the American Society of Nuclear Cardiology, and the Society of Cardiovascular Computed Tomography, convened an interventional expert panel to update the ACC/AHA/SCAI/STS recommendations issued in the Consensus Document: Appropriate use criteria for coronary revascularization. It used to be that the cardiologist would act as gatekeeper for percutaneous coronary intervention and coronary artery bypass grafting. In contrast, the concept of the heart team is being advocated whereby a surgeon, interventionalist, cardiologist and other specialties as required work together to decide on needed treatment.

Read here about the genesis of the Heart Team, its advantages and limitations, and find a review of risk scores and how a model can help guide decision making.

Syntas Score

Syntas Score online calculator

Supports use of renin-angiotensin aldosterone blockers.
SyNTAX Score

Mohr FW, Serruys PW. Anatomical and clinical characteristics to guide decision making between coronary artery bypass graft surgery (CABG) and percutaneous coronary intervention procedure (PCI) are limitations of the SYNTAX score. Circulation. 1995 Oct 15;92(8):2245-51. PMID: 7554208

Study supports the utility of Syntax Score II versus Syntax Score (I) to predict 4-year mortality in patients undergoing coronary artery procedures. Syntax Score II adds clinical variables to the anatomic data of Syntax Score (I).

Access to the EuroScore calculator.


Mediastinitis is a severe complication of coronary artery bypass graft surgery (CABG). The purpose of the present study was to determine preoperative and intraoperative variables that predict mediastinitis and to determine the impact of this complication on long-term survival. METHODS AND RESULTS Data on 20 preoperative and intraoperative variables were collected prospectively on 6459 consecutive patients who underwent CABG between January 1987 and January 1999. Eighty-three patients (1.3%) developed mediastinitis postoperatively, and a total of 24 patients (0.3%) died. Multivariate analysis identified 4 of the 20 variables as highly significant independent predictors for the development of mediastinitis: obesity (P = .0002), New York Heart Association congestive heart failure class (P < .0001), previous heart surgery (P = .008), and duration of cardiopulmonary bypass (P = .02). A comprehensive review of the literature identified 13 other studies that evaluated 48 factors as predictors of mediastinitis; these data were critically analyzed and combined with the results from this series. In this series, postoperative interval mortality during the first 60 days after surgery for the patients with mediastinitis was 11.8% compared with 5.5% for the patients without mediastinitis. Internal mortality between 1 and 2 years after surgery remained high for the mediastinitis group (18%) relative to the nonmediastinitis group (3%). These differences were not estimated by adjusting for important variables that influenced late survival in this population. CONCLUSIONS: The present study adds to the literature suggesting that obesity and duration of surgery are the most important predictors of mediastinitis. Furthermore, although the early increase in mortality has been well described, the present study documents for the first time that mediastinitis has a significant negative influence on long-term survival independent of the patient's preoperative condition.

CABC

Invasive versus noninvasive cardiac evaluation in patients with severe chest pain. J Am Coll Cardiol. 2000 May 9;35(9):1905-11. PMID: 10747278

The 30-day mortality in patients with risk factors for acute coronary syndrome is higher in those who undergo invasive evaluation compared with those who undergo noninvasive evaluation. OBJECTIVES: The objective of this study was to compare the effect of invasive versus noninvasive cardiac evaluation on 30-day mortality in patients with chest pain who have one or more risk factors for acute coronary syndrome. METHODS: We performed a retrospective analysis of patients with chest pain who were admitted to the emergency department of the Cleveland Clinic Foundation between January 1993 and January 2000. Patients with a final diagnosis of acute coronary syndrome, unstable angina, or non-ST-segment elevation myocardial infarction were identified. The final diagnosis was confirmed by reviewing the patient's chart, echocardiogram, coronary angiography, and/or cardiac enzyme levels. RESULTS: During the study period, 32,929 patients presented to the emergency department with chest pain. Of these, 2,419 patients with one or more risk factors for acute coronary syndrome were included in the analysis. The study population consisted of 1,660 (68.8%) men and 759 (31.2%) women, with a mean age of 60.4 years (range, 18-98 years). The most common risk factors were hypertension, diabetes, and current smoking. The mean number of risk factors per patient was 2.2. Overall, 1,765 patients (72.9%) underwent invasive evaluation, and 654 patients (27.1%) underwent noninvasive evaluation. Invasive evaluation was undertaken in 1,065 patients (82.9%) for chest pain, in 510 patients (39.4%) for other reasons, and in 190 patients (14.5%) for other reasons. Noninvasive evaluation was undertaken in 524 patients (88.6%) for chest pain and in 70 patients (11.4%) for other reasons. The 30-day mortality was 2.2% in the invasive group and 4.4% in the noninvasive group (P = .04 by the log-rank test). CONCLUSION: This study suggests that those patients with chest pain and one or more risk factors for acute coronary syndrome who undergo invasive cardiac evaluation have a significantly lower 30-day mortality than those who undergo noninvasive cardiac evaluation.
Focus is pre-operative nutritional state as a risk factor for complications for patients 65 years of age and older. Nutrition status; glycemic control, and postoperative infectious complications. Arch Surg. 2006 Apr; 141(4): 375-80; discussion 380. PMID: 16418895

Abstract: HYPOTHESIS: Good preoperative glycemic control (hemoglobin A(1c) [HbA(1c)] level <7%) is associated with decreased postoperative infections. DISSENI: Retrospective observational study using Veterans Affairs National Surgical Quality Improvement Program data from the Veterans Affairs Connecticut Healthcare System from January 1, 2000, through September 30, 2003. SETTING: Veterans Affairs Connecticut Healthcare System, a tertiary referral center and major university teaching site. PATIENTS: Six hundred forty-seven diabetic patients underwent major noncardiac surgery during the study period; 119 were excluded because their HbA(1c) levels were more than 180 days prior to surgery; 20 were excluded for other reasons; 490 diabetic patients were included. The study patients were predominantly nonblack men with a median age of 74 years. MAIN OUTCOMES MEASURES: Primary outcomes were infectious complications, including pneumonia, surgical infection, postoperative infection, or sepsis. Binary analysis was used first to determine the association of each independent variable (age, race, diabetes treatment, American Society of Anesthesiologists classification, Activities of Daily Living assessment, elective vs. emergency procedure, wound classification, operation length, and HbA(1c) level) with outcome. Factors significant at P < .05 were used in a multivariable logistic regression model. RESULTS: In the multivariable model, age, American Society of Anesthesiologists class, operation length, wound class, and HbA(1c) levels were significantly associated with postoperative infections. Emergency/urgent cases and dependence in Activities of Daily Living were significant in binary analysis but failed to reach statistical significance in the multivariable model. An HbA(1c) level of less than 7% was significantly associated with decreased infectious complications with an adjusted odds ratio of 2.13 (95% confidence interval, 1.23-3.70) and a P value of .007. CONCLUSION: Good preoperative glycemic control (HbA(1c) levels <7%) is associated with decrease in infectious complications across a variety of surgical procedures.

Cohort includes only male patients.

Support value of preoperative blood sugar control in surgical patients.

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Glycemic Control


BACKGROUND: The predictive role of hemoglobin A1c (HbA1c) on long-term outcomes after coronary artery bypass surgery has not been evaluated. METHODS: Preoperative HbA1c levels were obtained in 5,201 patients undergoing primary, elective coronary artery bypass surgery at Emory Healthcare Hospitals from January 2000 to December 2004 and entered prospectively into a computerized database. Long-term survival status was determined by cross-referencing patient records with the Social Security Death Index. Log-rank (unadjusted) and Cox proportional hazards regression models (adjusted) were employed to determine whether HbA1c and diabetes mellitus were independent risk factors for reduced long-term survival, adjusted for 20 covariates. Hazard ratios for each unit increase in continuous HbA1c were calculated. RESULTS: Patients with HbA1c levels of 7% or greater had a lower unadjusted 5-year survival compared with patients without diabetes (p < 0.001). Similarly, patients with diabetes mellitus had lower unadjusted 5-year survival compared with patients without diabetes (p < 0.001). After multivariable adjustment, higher HbA1c (measured as a continuous variable) was associated with reduced long-term survival for each unit increase in HbA1c (hazard ratio 1.25, p < 0.001), but preoperative diagnosis of diabetes was not associated with reduced long-term survival after coronary artery bypass surgery (p = 0.4). Other multivariable predictors of reduced long-term survival included age, cerebrovascular disease, elevated serum creatinine, renal insufficiency, congestive heart failure, previous myocardial infarction, chronic lung disease, and peripheral vascular disease. CONCLUSIONS: Poor preoperative glycemic control, as measured by an elevated HbA1c, is associated with reduced long-term survival after coronary artery bypass surgery. Optimizing glucose control in these patients may improve long-term survival.

Glycemic Control

Cohort study of 3,205 patients undergoing elective primary coronary artery bypass graft surgery in whom HbA1c was measured pre-operatively. A limitation of the study was that diabetes control was not measured following surgery. A strategy of pre-operative control of diabetes prior to CABG with increased long term survival.

Nutritional status, Reduced serum albumin


BACKGROUND: Poor nutrition status is considered a risk factor for postoperative complications in the adult population. In elderly patients, who often have a poor nutrition status, this relationship has not been substantiated. Thus, the aim of this systematic review was to assess the merit of preoperative nutritional parameters used to predict postoperative outcome in elderly surgery patients undergoing general surgery. METHODS: A systematic literature search of 10 consecutive years, 1996-2006, in PubMed, EMBASE, and Cochrane databases was performed. Search terms used were nutrition status, preoperative assessment, postoperative outcome, and surgery (hip or general), including their synonyms and MeSH terms. Limits used in the search were human and English, and age (65 years or older). Articles were screened using inclusion and exclusion criteria. All selected articles were checked on methodology and graded. RESULTS: Of 863 articles found, 15 were included. They showed profound heterogeneity in the parameters used for preoperative nutrition status and postoperative outcome. The only significant preoperative predictors of postoperative outcome in elderly general surgery patients were serum albumin and >= 10% weight loss in the previous 6 months. CONCLUSIONS: This systematic review revealed only 2 preoperative parameters to predict postoperative outcome in elderly general surgery patients: weight loss and serum albumin. Both are open to discussion in their use as a preoperative nutrition parameter. Nonetheless, serum albumin seems a reliable preoperative parameter to identify a patient at risk for nutrition deterioration and related complicated postoperative course.

Nutritional status, Reduced serum albumin

Houjijk AP. Preoperative nutrition status and postoperative outcome in elderly surgery patients: weight loss and serum albumin. Both are open to discussion in their use as a preoperative nutrition parameter. A systematic review revealed only 2 preoperative parameters to predict postoperative outcome in elderly general surgery patients: weight loss and serum albumin. Both are open to discussion in their use as a preoperative nutrition parameter. Nonetheless, serum albumin seems a reliable preoperative parameter to identify a patient at risk for nutrition deterioration and related complicated postoperative course.

Cohort study of 647 diabetic patients, a tertiary referral center and major university teaching site. PATIENTS: Six hundred forty-seven diabetic patients underwent major noncardiac surgery during the study period; 119 were excluded because their HbA(1c) levels were more than 180 days prior to surgery; 20 were excluded for other reasons; 490 diabetic patients were included. The study patients were predominantly nonblack men with a median age of 74 years. MAIN OUTCOMES MEASURES: Primary outcomes were infectious complications, including pneumonia, surgical infection, postoperative infection, or sepsis. Binary analysis was used first to determine the association of each independent variable (age, race, diabetes treatment, American Society of Anesthesiologists classification, Activities of Daily Living assessment, elective vs. emergency procedure, wound classification, operation length, and HbA(1c) level) with outcome. Factors significant at P < .05 were used in a multivariable logistic regression model. RESULTS: In the multivariable model, age, American Society of Anesthesiologists class, operation length, wound class, and HbA(1c) levels were significantly associated with postoperative infections. Emergency/urgent cases and dependence in Activities of Daily Living were significant in binary analysis but failed to reach statistical significance in the multivariable model. An HbA(1c) level of less than 7% was significantly associated with decreased infectious complications with an adjusted odds ratio of 2.13 (95% confidence interval, 1.23-3.70) and a P value of .007. CONCLUSION: Good preoperative glycemic control (HbA(1c) levels <7%) is associated with decrease in infectious complications across a variety of surgical procedures.
Retrospective cohort study of forty-four adult patients with cirrhosis undergoing cardiac surgery were evaluated with Child-Pugh and MELD scores. 

A cutoff Child-Pugh score >7 was found to have a sensitivity and specificity of 86% and 92% for mortality, with a negative predictive value of 97% (95% confidence interval [CI], 84%-99%) and positive predictive value of 27% (95% CI, 18%-41%), respectively. However, a similar cutoff value for MELD score could not be established."

Background and aims: This study aims to quantify the risk of cardiac surgery in patients with cirrhosis.

Methods: Records of all adult patients with cirrhosis undergoing cardiac surgery, using cardiopulmonary bypass at the Cleveland Clinic (Cleveland, OH) from January 1992 to June 2002 were analyzed for any relationship of Child-Pugh class and/or score and Model for End-Stage Liver Disease (MELD) score with outcome measures of hepatic decompensation and death during the first 3 months after surgery. RESULTS: Forty-four patients underwent coronary artery bypass grafting (16 patients), valve surgery (16 patients), a combination of 2 procedures (10 patients), or pericardiectomy (2 patients). Twelve patients (27%) developed hepatic decompensation, and 7 patients (16%) died. Proportions of hepatic decompensation were 3 of 6, 8 of 12, and 4 of 16 patients, and death, 3 of 6, 5 of 12, and 4 of 16 patients in Child-Pugh class A, B, and C, respectively. The association of hepatic decompensation and mortality with Child-Pugh class, Child-Pugh score, and MELD score was significant (P < 0.001). Areas under the receiver operating characteristic curves for mortality were similar for Child-Pugh class (0.84 +/- 0.09) and MELD scores (0.87 +/- 0.09). A cutoff Child-Pugh score >7 was found to have a sensitivity and specificity of 86% and 92% for mortality, with a negative predictive value of 97% (95% confidence interval [CI], 84%-99%) and positive predictive value of 27% (95% CI, 18%-41%), respectively. However, a similar cutoff value for MELD score could not be established. CONCLUSIONS: Child-Pugh class and/or score and MELD score are significantly associated with hepatic decompensation and mortality after cardiac surgery using cardiopulmonary bypass in patients with cirrhosis. Such surgery can be conducted safely in patients with a Child-Pugh score <7. Patients with a Child-Pugh score >/=7 have a significant risk for mortality.

Background: Smoking cessation and control of cardiopulmonary risk factors are important in improving outcomes in patients undergoing cardiac surgery. Smoking cessation is particularly important in patients with cirrhosis, as they are at increased risk of adverse outcomes after cardiac surgery. Although there is evidence that smoking intervention before surgery reduces postoperative morbidity, the clinical benefit of smoking intervention should be determined in these patients. We investigated the effect of smoking cessation in patients undergoing cardiac surgery on perioperative and postoperative morbidity.

Methods: Retrospective cohort study of forty-four adult patients with cirrhosis undergoing cardiac surgery were evaluated with Child-Pugh and MELD scores. A cutoff Child-Pugh score >7 was found to have a sensitivity and specificity of 86% and 92% for mortality, with a negative predictive value of 97% (95% confidence interval [CI], 84%-99%) and positive predictive value of 27% (95% CI, 18%-41%), respectively. However, a similar cutoff value for MELD score could not be established.

The Washington State Department of Labor and Industries (WSDLI) is the state agency responsible for workers' compensation in Washington State, developing the Worker's Compensation Medical Advisory Committee (WCMA) guidelines to ensure the highest quality of care for injured workers in Washington State. The IIMAC is responsible for reviewing the literature and a consensus of expert opinion. The IIMAC's primary goal is to provide standards that ensure the highest quality of care for injured workers.

The AMDG Guideline and this guideline are intended for use by health care providers, the department, insurers, and utilization review staff. This guideline was developed in 2011-2012 by the Industrial Insurance Medical Advisory Committee (IIMAC) and its subcommittee on chronic non-cancer pain. It is based on the best available clinical and scientific evidence from a systematic review of the literature and a consensus of expert opinion. The IIMAC’s primary goal is to provide standards that ensure the highest quality of care for injured workers in Washington State.
BACKGROUND: Unhealthy alcohol use is prevalent but under-diagnosed in primary care settings. OBJECTIVE: To validate, in primary care, a single-item screening test for unhealthy alcohol use recommended by the National Institute on Alcohol Abuse and Alcoholism (NIAAA). DESIGN: Cross-sectional study. PARTICIPANTS: Adult English-speaking patients recruited from primary care waiting rooms. MEASUREMENTS: Participants were asked the single screening question, "How many times in the past year have you had 5 or more drinks in a day?", where 5 is for men and 4 for women, and a response of 1 or greater (corrected) is considered positive. Unhealthy alcohol use was defined as the presence of an alcohol use disorder, as determined by a standardized diagnostic interview, or risk consumption, as determined using a validated 30-day calendar method. MAIN RESULTS: Of 549 eligible primary care patients, 286 (77.3%) completed the interview. The single-question screen was 82.8% sensitive (95% confidence interval [CI] 72.5% to 86.5%) and 79.0% specific (95% CI 73.1% to 84.4%) for the detection of unhealthy alcohol use. It was slightly more sensitive (87.9% CI 72.7% to 95.2%) but was less specific (78.6% CI 68.8% to 87.2%) for the detection of a current alcohol use disorder. These characteristics were similar to that of a commonly used three-item screen, and were affected very little by subject demographic characteristics. CONCLUSIONS: The single screening question recommended by the NIAAA accurately identified unhealthy alcohol use in this sample of primary care patients. These findings support the use of this brief screen in primary care.

METHODOLOGY: We queried discharge records from the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP, 2005-2007) for all elective adult admissions. The 7,631 (2.5%) patients with alcohol use were included in the study. Primary outcome measures included length of stay. We sought to determine the effect of active alcohol consumption following elective surgery. METHODS: We queried discharge records from the American College of Surgeons' National Surgical Quality Improvement Program (NSQIP, 2005-2007) for all elective adult admissions. The 7,631 (2.5%) patients with alcohol use were included in the study. Primary outcome measures included length of stay. We sought to determine the effect of active alcohol consumption following elective surgery. RESULTS: Of the 7,631 patients, 301,994 (97.5%) patients denied ETOH use. Multivariate analysis was performed with adjustments for demographic and comorbid factors. Primary outcome measures included length of stay (LOS), postoperative complications, and death. RESULTS: ETOH use associated with elective surgery occurred over the course of the study (p < 0.001). ETOH use was an independent predictor of pneumonia (OR 1.5, 95% CI 1.1-1.9), superficial surgical site infection (SSSI; OR 1.15, 95% CI 1.05-1.25), wound disruption (OR 1.41, 95% CI 1.10-1.80), and prolonged LOS (OR 1.17, 95% CI 1.00-1.36). Except for SSSI, these complications were independent risk factors for postoperative mortality. ETOH use was associated with earlier time to wound disruption (9 vs. 11 days; p = 0.04), longer median hospital stays (5 vs. 3 days; p = 0.001), and longer LOS after operation (4 vs. 3 days; p < 0.0001). CONCLUSIONS: Active alcohol consumption is a significant determinant of adverse outcomes in elective surgery; patients with ETOH use who are scheduled to undergo elective surgery should be appropriately educated and counseled.

OBJECTIVE: To determine whether an intervention with smoking cessation starting 6 weeks before surgery would reduce the frequency of postoperative complications. METHODS: We performed a randomized controlled trial, conducted between February 2004 and December 2006 at 4 university-affiliated hospitals in the Stockholm region, Sweden. The outcome assessment was blinded. Our follow-up period was 30 days. Eligibility criteria were active daily smokers, aged 18 to 79 years. Of the 238 patients assessed, 76 refused participating, and 117 men and women undergoing surgery for hernia repair, bariatric surgery, or hip surgery prophylaxis were enrolled. INTERVENTION: Smoking cessation therapy with individual counseling and nicotine substitution started 6 weeks before surgery and continued 4 weeks postoperatively. The control group received standard care. The main outcome measure was frequency of any postoperative complication. RESULTS: An intention-to-treat analysis showed that the overall complication rate in the control group was 45%, and in the intervention group, it was 25% (P = 0.02). Relative risk reduction for the primary outcome of any postoperative complication was 45% and number needed to treat was 9 (95% CI, 3-133). A post hoc analysis showed that abstainers had fewer complications (15%) than those who continued to smoke or only reduced smoking (25%), although this difference was not statistically significant. CONCLUSION: Perioperative smoking cessation seems to be an effective tool to reduce postoperative complications even if it is introduced as late as 4 weeks before surgery.

OBJECTIVE: To determine whether an intervention with smoking cessation starting 4 weeks before general and orthopedic surgery would reduce the frequency of postoperative complications. METHODS: We performed a randomized controlled trial, conducted between February 2004 and December 2006 at 4 university-affiliated hospitals in the Stockholm region, Sweden. The outcome assessment was blinded. Our follow-up period was 30 days. Eligibility criteria were active daily smokers, aged 18 to 79 years. Of the 238 patients assessed, 76 refused participating, and 117 men and women undergoing surgery for hernia repair, bariatric surgery, or hip or knee prosthesis were enrolled. INTERVENTION: Smoking cessation therapy with individual counseling and nicotine substitution started 4 weeks before surgery and continued 4 weeks postoperatively. The control group received standard care. The main outcome measure was frequency of any postoperative complication. RESULTS: An intention-to-treat analysis showed that the overall complication rate in the control group was 45%, and in the intervention group, it was 25% (P = 0.02). Relative risk reduction for the primary outcome of any postoperative complication was 45% and number needed to treat was 9 (95% CI, 3-133). A post hoc analysis showed that abstainers had fewer complications (15%) than those who continued to smoke or only reduced smoking (25%), although this difference was not statistically significant. CONCLUSION: Perioperative smoking cessation seems to be an effective tool to reduce postoperative complications even if it is introduced as late as 4 weeks before surgery.
OBJECTIVE: The goal of this study was to examine the feasibility, acceptability, and efficacy of a brief, tailored cognitive-behavioral intervention for patients with symptoms of depressive or anxiety disorders before undergoing coronary artery bypass graft (CABG) surgery. METHODS: Patients were recruited from a university teaching hospital between February 2007 and May 2009. Patients were randomly assigned to receive treatment as usual (TAU) or a cognitive behavioral therapy (CBT) intervention called Managing Anxiety and Depression using Education and Skills (MADES). A total of 100 subjects were randomized into the study. Length of hospital stay was assessed with a 1-way analysis of variance. Depression, anxiety, and quality of life were assessed with mixed-model repeated measures analysis. RESULTS: Overall, the intervention was feasible, and patients had a positive impression of the MANDES. Patients in the TAU group stayed longer in the hospital than did those in the MANDES group (7.8 ± 5.9 days vs 6.2 ± 4.3 days; P < .049). Depression symptoms increased at time of hospital discharge for the TAU group, whereas the MANDES group showed a decrease in depressive symptoms at the time of discharge. Quality of life and anxiety symptoms improved in both groups at 3 to 6 weeks follow-up; however, the MANDES group had greater improvements than did the TAU group. CONCLUSION: This study demonstrated that brief, tailored CBT targeting depressive and anxiety disorders is both feasible and acceptable for patients undergoing CABG surgery. Most important, this intervention improved depressive and anxiety symptoms, as well as quality of life. Moreover, it reduced in-hospital length of stay. This study found that a cognitive-behavioral intervention for patients undergoing CABG surgery for symptoms of preoperative depression/anxiety is both feasible and acceptable. Most important, this intervention improved depressive and anxiety symptoms, as well as quality of life. It also reduced in-hospital length of stay.

Short-term study of 100 patients with coronary artery disease scheduled for coronary artery bypass graft surgery were randomized into either treatment as usual or brief cognitive-behavioral therapy intervention. Patients treated with CBT had reduced hospital length of stay, improved depression symptoms at discharge, and improved indicators of quality of life and anxiety at 3-4 weeks post-discharge follow-up.

OBJECTIVE: To determine if patients with coronary artery bypass graft surgery who were depressed at the time of surgery could benefit from treatment with a tailored cognitive behavioral intervention before discharge.

BACKGROUND: The association of depression with cardiac events has been investigated mainly in community cohorts, in patients undergoing coronary intervention, or in patients who have had myocardial infarction. We have assessed the effect of depression on outcomes after coronary bypass graft (CABG) surgery. METHODS: In a prospective study, we followed up for 1 year 207 men and 103 women, who had undergone coronary artery bypass graft surgery. We assessed depression with a structured psychiatric interview (diagnostic interview schedule) and a questionnaire (Beck depression inventory) before discharge. Cardiac events included angina or heart failure that needed admission to hospital, myocardial infarction, cardiac arrest, percutaneous transluminal coronary angioplasty, repeat CABG, and cardiac mortality. Non-cardiac events consisted of all other reasons for mortality or readmission. FINDINGS: 63 patients (20%) met modified diagnostic statistical manual IV criteria for major depressive disorder. At 12 months, 17 (27%) of these patients had a cardiac event compared with 25 of 246 (10%) who were not depressed (P = .008). Five variables had significant univariate associations with cardiac events: sex, living alone, low ejection fraction (<0.35), length of hospital stay, and depression. In a Cox proportional hazard model with these five and two other variables of cardiac severity, major depression disorder (hazard ratio 2.3 [95% CI 1.17-4.56]), low ejection fraction (2.3 [1.07-5.03]), low ejection fraction (2.3 [1.07-5.03]), low ejection fraction (2.3 [1.07-5.03]), and female sex (2.4 [1.24-4.44]) were associated with adverse outcomes. Depression did not predict deaths or admissions for non-cardiac events. INTERPRETATION: Depression is an important independent risk factor for cardiac events after CABG surgery.

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Decision aids are evidence-based sources of health information that can help patients make informed treatment decisions. However, little is known about how decision aids affect health care use when they are implemented outside of randomized controlled clinical trials. We conducted an observational study to examine the associations between introducing decision aids for hip and knee osteoarthritis and rates of joint replacement surgery and costs in a large health system in Washington State. Consistent with prior randomized trials, our introduction of decision aids was associated with 36 percent fewer hip replacement surgeries, 38 percent fewer knee replacement surgeries, and 12-23 percent lower costs over six months. These findings support the concept that patient decision aids for some health conditions, for which treatment decisions are highly sensitive to patients’ and physicians’ preferences, may reduce rates of elective surgery and lower costs.

BACKGROUND: Most survival prediction models for coronary artery bypass grafting surgery are limited to in-hospital or 30-day endpoints. We estimate a long-term survival model using data from the Society of Thoracic Surgeons Adult Cardiac Surgery Database and Centers for Medicare and Medicaid Services. METHODS AND RESULTS: The final study cohort included 349,285 isolated coronary artery bypass grafting patients aged 16 years, discharged between January 1, 2002, and December 31, 2007, from 677 Society of Thoracic Surgeons-participating hospitals, randomly divided into training (n=174,506) and validation (n=173,835) samples. Through linkage with Centers for Medicare and Medicaid Services claims data, we ascertained in-hospital status from date of discharge through December 31, 2008 (1- to 6-year follow-up). Because the proportional hazards assumption was violated, we fit 4 Cox regression models conditional on being alive at the beginning of the following intervals: 0 to 30 days, 31 to 180 days, 181 days to 2 years, and >2 years. Kaplan-Meier-estimated mortality was 3.2% at 30 days, 6.4% at 180 days, 6.1% at 1 year, and 23.3% at 5 years follow-up. Harrell C statistic for predicting overall survival time was 0.724. Some risk factors (eg, emergency status, shock, reoperation) were strong predictors of short-term outcomes, but for early survivors, became nonsignificant within 2 years. The adverse impact of some other risk factors (eg, diabetes mellitus) continued to increase. CONCLUSIONS: Using clinical registry data and longitudinal claims data, we developed a long-term survival prediction model for isolated coronary artery bypass grafting. This provides valuable information for shared decision making, comparative effectiveness research, quality improvement, and provider profiling.

The McKee Asthma Control Test (M-ACT) is an easy-to-use self-report tool based on the American Thoracic Society guidelines for asthma management, and is designed to improve asthma control in adults and children. The M-ACT consists of 11 questions that assess asthma control in the past 2 weeks, and provides a score that ranges from 0 to 10. Higher scores indicate better control of asthma. The M-ACT is a valid and reliable measure of asthma control, and has been shown to be a useful tool for assessing asthma control in clinical settings. The M-ACT is available in both English and Spanish, and can be administered in a variety of settings, including clinics, hospitals, and schools. The M-ACT is free of charge and can be downloaded from the website of the American Thoracic Society. The M-ACT is an easy-to-use, self-report measure of asthma control that is based on the American Thoracic Society guidelines for asthma management. It is designed to improve asthma control in adults and children, and is available in both English and Spanish.

In a large, retrospective study of patients aged 65 or over, with isolated CABGs to develop a long-term survival prediction model. Patient follow-up was 1-7 years. We support the use of M-ACT in patients 65 or over, to predict survival after CABG and as a tool for shared decision making.


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CONVERGE—It is unclear if advance directives (living wills) are associated with end-of-life expenditures and treatments. OBJECTIVES: To examine regional variation in the associations between treatment-limiting advance directive use, end-of-life Medicare expenditures, and use of palliative and intensive treatments. DESIGN, SETTING, AND PATIENTS: Prospectively collected survey data from the Health and Retirement Study for 3302 Medicare beneficiaries who died between 1998 and 2007 linked to Medicare claims and the National Death Index. Multivariable regression models examined associations between advance directives, end-of-life Medicare expenditures, and treatments by level of Medicare spending in the decedent’s hospital referral region. MAIN OUTCOME MEASURES: Medicare expenditures, end-of-life treatments, hospice care, and in-hospital death over the last 6 months of life. RESULTS: Advance directives specifying limits in care were associated with lower spending in hospital referral regions with high average levels of end-of-life expenditures ($558 per decedent; 95% CI, $360,862 to $367), but there was no difference in spending in hospital referral regions with lower or medium levels of end-of-life expenditures. Directives were associated with lower adjusted probabilities of in-hospital death in high and medium spending regions (9.95% vs 11% in high-spending regions; 1.95% vs 2.0% in medium-spending regions). Advance directives were associated with higher adjusted probabilities of hospice use in high and medium-spending regions (7%; 9% in high-spending regions; 11% vs 12% in medium-spending regions), but not in low-spending regions. CONCLUSION: Advance directives specifying limitations in end-of-life care were associated with significantly lower levels of Medicare spending, lower likelihood of in-hospital death, and higher use of hospice care in regions characterized by higher levels of end-of-life spending.

A2B Supports the use of advance directives to reduce the use of inappropriate and costly end-of-life care.


Attorney Durable Power of Attorney. http://circ.ahajournals.org/content/116/17/e418.full


Mupirocin-chlorhexidine group (P=0.005). CONCLUSIONS: The number of surgical-site S. aureus infections was associated with higher adjusted probabilities of in-hospital death in high and medium-spending regions (9.95% vs 11% in high-spending regions; 1.95% vs 2.0% in medium-spending regions). Advance directives were associated with higher adjusted probabilities of hospice use in high and medium-spending regions (7%; 9% in high-spending regions; 11% vs 12% in medium-spending regions), but not in low-spending regions. CONCLUSION: Advance directives specifying limitations in end-of-life care were associated with significantly lower levels of Medicare spending, lower likelihood of in-hospital death, and higher use of hospice care in regions characterized by higher levels of end-of-life spending.

DURABLE POWER OF ATTORNEY: 


BACKGROUND: Nasal carriers of Staphylococcus aureus are at increased risk for health care-associated infections with this organism. Decolonization of nasal and extranasal sites by means of a real-time polymerase-chain-reaction (PCR) assay, followed by treatment with mupirocin nasal ointment and chlorhexidine soap, reduced the risk of hospital-associated S. aureus infection. RESULTS: From October 2005 through June 2007, a total of 6771 patients were screened on admission. A total of 1270 nasal swabs from 1251 patients were positive for S. aureus. We enrolled 917 of these patients in the intention-to-treat analysis, of whom 808 (88.1%) underwent a surgical procedure. All the S. aureus strains identified on PCR assay were susceptible to methicillin and mupirocin. The rate of S. aureus infection was 3.4% (17 of 504 patients) in the mupirocin-chlorhexidine group, as compared with 7.7% (32 of 423 patients) in the placebo group (relative risk of infection, 0.42; 95% confidence interval [CI], 0.23 to 0.75). The effect of mupirocin-chlorhexidine treatment was most pronounced for deep surgical-site infections (relative risk, 0.21; 95% CI, 0.07 to 0.62). There was no significant difference in all-cause in-hospital mortality between the two groups. The time to the onset of nosocomial infection was shorter in the placebo group than in the mupirocin-chlorhexidine group (P=0.035). CONCLUSIONS: The number of surgical-site S. aureus infections acquired in the hospital can be reduced by rapid screening and decolonization of nasal carriers of S. aureus on admission. (Current Controlled Trials number, ISRCTN56186788.)
Dental screening


http://jama.jamanetwork.com/content/4522/jrv05005_443_451.pdf

Recommendation #6: In the absence of reliable evidence linking poor oral health to prosthetic joint infection, it is the opinion of the work group that patients with prosthetic joint implants or other orthopaedic implants maintain appropriate oral hygiene. Grade of Recommendation: Consensus.

Sleep apnea/Pulmonary Hypertension


AIR: Obstructive sleep apnea (OSA) is not generally acknowledged as a perioperative risk factor. High incidence of Sleep disordered breathing has been noticed in patients with cardiovascular disease. The Sleep Heart Health Research Study Group found Apnea-hypopnea index (AHI) as modest as 1-10 to be associated with cardiovascular disease manifestations. Given the lack of data we chose to study the incremental risk of OSA in patients undergoing cardiac surgery. METHODS: We looked at 2187 patients who underwent cardiac surgery at the Cleveland Clinic. Of those, 37 patients were also identified on the Cleveland Clinic Sleep center database as having OSA. Each of these 37 cases were propensity matched for multiple covariates with 5 controls within a distance of 0.201 units. At assumption was made that if the surgery was performed within two years of the diagnosis of OSA, the patient had OSA at the time of surgery. RESULTS: Higher incidence of cerebrovascular (p=0.038), postoperative infection (p=0.038) and inceased ICU length of stay (p=0.032) were noted in the group with OSA after cardiac surgery. The difference in the rates of inhospital mortality was not clinically significant by the presence of the etiologic factors (9.2% vs. 1.6%). Differences in the rates of readmission, total time, and overall postoperative morbidity were not statistically significant. CONCLUSIONS: Incremental risk for postoperative complications is suggested in patients with OSA undergoing cardiac surgery. This risk is underestimated on account of lack of awareness about the incidence in the general population and the cardiovascular population in particular, difficulties in clinical suspicion and diagnosis and limited use of polysomnography.

1/C/1/8 Dental infection


CONSENT: Delirium is a common and serious complication in elderly patients. Evidence suggests that delirium is associated with long-term poor outcome but delirium often occurs in individuals with more severe underlying disease. OBJECTIVE: To assess the association between delirium in elderly patients and long-term poor outcomes, defined as mortality, institutionalization, or dementia, while controlling for important confounders. DATA SOURCES: A systematic search of studies published between January 1981 and April 2010 was conducted using the database of MEDLINE, EMBASE, PsycINFO, and Cochrane. STUDY SELECTION: Observational studies of elderly patients with delirium as a study variable and data on mortality, institutionalization, or dementia after a minimum follow-up of 3 months, and published in the English or Dutch language. Titles, abstracts, and articles were reviewed independently by 2 of the authors. Of 393 references in the original search, 51 relevant articles were identified. DATA EXTRACTION: Information on study design, characteristics of the study population, and outcome were extracted. Quality of studies was assessed based on elements of the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist for cohort studies. DATA SYNTHESIS: The primary analysis included only high-quality studies with statistical control for age, sex, comorbid illness or illness severity, and baseline dementia. Pooled effect estimates were calculated with random-effects models. The primary analysis with adjusted hazard ratios (HRs) showed that delirium is associated with an increased risk of death compared with controls after an average follow-up of 23.7 months (7 studies; 275/756 patients [36.6%] with delirium, 616/2234 controls [27.9%]; HR, 1.95 [95% confidence interval (CI), 1.41-2.72]; p <.001). Moreover, patients who had experienced delirium were also at increased risk of institutionalization (7 studies; average follow-up, 14.6 months; 176/537 patients [32.4%] with delirium and 210/1052 controls [20.0%]; odds ratio [OR], 2.41 [95% CI, 1.77-3.29]; Q, 0%; and dementia (2 studies, average follow-up, 4.3 years; 25/66 patients [37.5%] with delirium and 15/185 controls [8.1%]; OR, 4.18 [95% CI, 1.66-10.42]; Q, 0%). The sensitivity, trim-and-fill, and secondary analyses with unadjusted high-quality risk estimates stratified according to the study characteristics confirmed the robustness of these results. CONCLUSION: This meta-analysis provides evidence that delirium in elderly patients is associated with poor outcome independent of important confounders, such as age, sex, comorbid illness or illness severity, and baseline dementia. 2/C/1/44
Evidence that intraoperative hemodynamic abnormalities influence outcome is limited. The purpose of this study was to determine whether intraoperative hemodynamic abnormalities were associated with mortality, stroke, or perioperative myocardial infarction (PMI) in a large cohort of patients undergoing coronary artery bypass grafting. Risk factors and outcomes were queried from a state-mandated cardiac surgery reporting system at two hospitals in New York. INT: Intraoperative hemodynamic abnormalities were derived from computerized anesthesia records by assessing the duration of exposure to moderate or severe extremes of hemodynamic variables. Multivariable logistic regression identified independent predictors of perioperative mortality, stroke, and PMI. Among 2149 patients, there were 50 mortalities, 51 strokes, and 85 PMIs. In the precardiopulmonary bypass (pre-CPB) period, pulmonary hypertension was a predictor of mortality (odds ratio [OR] 2.1, P = 0.029), and bradycardia and tachycardia were predictors of PMI (OR 2.9, P = 0.007 and OR 2.0, P = 0.038, respectively). During CPB, hypertension was a predictor of mortality (OR 1.3, P = 0.001). After CPB, tachycardia was a predictor of mortality (OR 1.1, P = 0.001), diastolic atrial hypertension was a predictor of stroke (OR 1.4, P = 0.012), and pulmonary hypertension was a predictor of PMI (OR 7.0; P = 0.001). Increased pulmonary arterial diastolic pressure post-CPB was a predictor of mortality (OR 1.3, P = 0.006), stroke (OR 1.5, P = 0.002), and PMI (OR 1.3, P = 0.001). Rapid intraoperative variations in blood pressure and heart rate were not independent predictors of these outcomes. These findings demonstrate the prognostic significance of intraoperative hemodynamic abnormalities, including data from pulmonary artery catheterization, to adverse postoperative outcomes. It is not known whether interventions to control these variables would improve outcomes. IMPLICATIONS: Intraoperative hemodynamic abnormalities, including pulmonary hypertension, hypertension during cardiopulmonary bypass, and postcardiopulmonary bypass pulmonary diastolic hypertension, were independently associated with mortality, stroke, and perioperative myocardial infarction, and above the effects of other preoperative risk factors.
OBJECTIVES: Patient-reported outcomes (PROs) are essential when evaluating many new treatments in health care, yet, current measures have been limited by a lack of precision, standardization, and comparability of scores across studies and domains. The Patient-Reported Outcomes Measurement Information System (PROMIS) provides item banks that offer the potential for efficient (minimizes item number without compromising reliability), flexible (enables optional use of interchangeable items), and precise (minimizes error in estimated measurement) assessment of commonly studied PROs. We report results from the first large-scale testing of PROMIS item banks. DESIGN AND SETTING: Fourteen item pools were tested in the U.S. general population and clinical groups using an online panel and clinic recruitment. A scale-setting subsample was created reflecting demographics proportional to the U.S. general population. RESULTS: Using item response theory (IERT response models), item banks were calibrated on a sample of 21,133, measuring components of self-relied physical, mental, and social health, along with a 10-item Global Health Scale. Short forms from each bank were developed and compared with the overall bank and with other well-established and widely accepted ("legacy") measures. All items banks demonstrated good reliability across most of the score distribution. Construct validity was supported by moderate to strong correlations with legacy measures. CONCLUSIONS: Item banks with short forms provide evidence that they are reliable and precise measures of generic symptoms and functional reports comparable to legacy instruments. Further testing will continue to validate and test PROMIS items and banks in diverse clinical populations.

OBJECTIVE: To assess the effect of surgeon volume on mortality for off-pump coronary artery bypass grafting (OPCAB). METHODS: From 1998 to 2004, 752,787 Medicare patients underwent coronary artery bypass grafting operations (CABG = 439,213; OPCAB = 273,274) within the National Inpatient Sample database. Hierarchical generalized linear regression modeling with split functions for annual individual operating surgeon volume was used to assess the relationship between annual surgeon volume and inpatient mortality, adjusted for comorbid disease and other potential confounders. RESULTS: OPCAB was performed in 18.8% of coronary artery bypass grafting operations. The average age for those undergoing OPCAB was 64±11 years, and female patients accounted for 29.3% of operations with 1 vs 2 vessel (20.6%), 2 vessel (34.6%), 3 vessel (20.5%), or 4 vessels or more (13.6%). Median surgeon volume for OPCAB was 105 (IQR: 54-160) operations per year. A highly significant nonlinear relationship between surgeon volume and risk-adjusted mortality was observed for OPCAB operations (P < 0.001). Specifically, an estimated 5% decrease in the absolute probability of death occurred after OPCAB performed by the surgeons with the highest volume, which is greater than the 3% estimated decrease for conventional CABG. CONCLUSIONS: Surgeon volume is one factor correlated with in-hospital mortality in patients undergoing CABG. Surgeons with more than 50 operations per year were associated with lower in-hospital mortality.
Retrospective cohort study of 57,150 patients undergoing revascularization CABG in the state of New York from 1997-1998. Mortality after correcting for severity of illness was lower in high volume hospitals compared to lower volume hospitals, and among higher volume surgeons compared to lower volume surgeons. The risk-adjusted mortality rate for patients undergoing surgery by lower volume surgeons compared to higher volume surgeons was 2.67% vs. 1.89%. The risk-adjusted mortality rate was significantly higher (2.47%) for patients undergoing surgery performed by surgeons with volumes of >125 in hospitals with volumes of >400. It supports the inverse relationship between hospital volume and mortality related to CABG surgery. Does not examine the relationship between patient mortality and individual surgeon volume.
Retrospective cohort study using data from the Medicare claims data base and the Nationwide Inpatient Sample, we examined the mortality associated with six different types of cardiovascular procedures and eight types of major cancer resections between 1994 and 2000 (total number of procedures, 2.5 million). Regression techniques were used to describe relations between hospital volume (total number of procedures performed per year) and mortality (in-hospital or within 30 days), with adjustment for characteristics of the patients. RESULTS: Mortality decreased as volume increased for all 14 types of procedures, but the relative importance of volume varied markedly according to the type of procedure. Absolute differences in adjusted mortality rates between very-low-volume hospitals and very high-volume hospitals ranged from over 10 percent for the pancreatic resection, 16.3 percent vs. 6.8 percent (to only 0.2 percent for coronary artery endarterectomy, 1.7 percent vs. 1.5 percent). The absolute differences in adjusted mortality rates between very-low-volume hospitals and very high-volume hospitals were greater than 2 percent for esophagectomy and pneumonectomy, 2 to 5 percent for gynecology, cystectomy, repair of a ruptured abdominal aortic aneurysm, and replacement of an aortic or mitral valve, and less than 0.2 percent for coronary artery bypass grafting, lower-extremity bypass, colectomy, biliary tract, and nephrectomy. CONCLUSION: In the absence of other information about the quality of surgery at the hospitals near them, Medicare patients undergoing selected cardiovascular or cancer procedures can significantly reduce their risk of operative death by choosing a high-volume hospital.

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The authors analyzed data from 11 randomized placebo-controlled trials (4,963 adults) testing acetaminophen, nonsteroidal antiinflammatory drugs, or selective cyclooxygenase-2 inhibitors given in combination with morphine after surgery. The median of the average of 2-h morphine consumption in controls was 4.8 mg (95% CI 3.1-5.7 mg); it was significantly decreased with all regimens by 15-55%. There was evidence of a reduction in pain intensity at 24 h (1 cm on a 0 to 10 cm visual analog scale) only with nonsteroidal antiinflammatory drugs (NSAIDs). There was a reduction of nausea/vomiting from 28.8% to 20.0% (number needed to treat, 10); and of sedation from 15.4% to 12.7% (number needed to treat, 19); but there was no significant decrease of the risk of severe bleeding from 0% to 1.7% (number needed to harm, 58). Selective cyclooxygenase-2 inhibitors increased the risk of renal failure in cardiac patients from 0% to 1.4% (number needed to harm, 79); a decrease in the postoperative nausea and vomiting is not a good indicator of the usefulness of a supplemental analgesic. There is evidence that the combination of nonsteroidal antiinflammatory drugs with patient-controlled analgesia morphine offers some advantages over morphine alone.

> Supports the use of multimedial analgesia to reduce opioid use.


> Supports the use of opioid analgesics in acute pain and in the treatment of chronic non-cancer pain.

The Joint Commission's Surgical Care Improvement Project ( SCIP) national healthcare quality measures version 4.0. 2016.

> The Joint Commission standard for postoperative management of administered antibiotics.

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> The Joint Commission standard for postoperative management of administered antibiotics.
Background: Staphylococcus aureus nasal carriers are at increased risk for health care-associated infections with this organism. Desorption of nasal and externalized sites on hospital admission may reduce this risk. METHODOLOGY: In a randomized, double-blind, placebo-controlled, multicenter trial, we assessed whether rapid identification of S. aureus nasal carriers by means of a real-time polymerase chain reaction (PCR) assay, followed by treatment with mupirocin nasal ointment and chlorhexidine soap, reduces the risk of hospital-associated S. aureus infection. RESULTS: From October 2005 through June 2007, a total of 6771 patients were enrolled in the trial. A total of 1270 nasal washes from 1251 patients were positive for S. aureus. We enrolled 817 of these patients in the intention-to-treat analysis, of whom 818 (81%) underwent a surgical procedure. All the S. aureus strains identified on PCR assay were susceptible to mupirocin and minocycline. The rate of S. aureus infection was 3.8% (17 of 445 patients) in the mupirocin-chlorhexidine group, as compared with 7.6% (12 of 413 patients) in the placebo group (relative risk of infection, 0.42; 95% confidence interval [CI], 0.23 to 0.75). The effect of mupirocin-chlorhexidine treatment was most pronounced for deep surgical-site infections (relative risk, 0.21; 95% CI, 0.07 to 0.62). There was no significant difference in all-cause in-hospital mortality between the two groups. The time to the onset of nosocomial infection was shorter in the placebo group than in the mupirocin-chlorhexidine group (P=0.005). CONCLUSIONS: The number of surgical-site S. aureus infections acquired in the hospital can be reduced by rapid screening and decontamination of nasal carriers of S. aureus on admission. [Current Controlled Trials number, ICTRNIS16978878B.]

Introduction: The CMS Surgical Care Improvement Project (SCIP) measures are a subset of National Quality Measures created through the joint efforts of the Centers for Medicare & Medicaid and the Joint Commission (Specifications Manual for National Hospital Quality Measures Version 2.5 effective for discharges 10-01-2008 through 03-31-2009). The SCIP measures have been endorsed by the National Quality Forum, and are used by hospital Compare, the Premier demonstration, and RAND/APH. Corresponding measures are used by FOIR at the individual physician level. The SCIP endorsed measures are calculated across a defined list of major surgical procedures and separately for the MS-DRG SCIP demonstration surgical procedure group of CABG, Cardiac Value, and Hip and Knee Replacement.

The joint Commission standard for preoperative hair removal.

The joint Commission standard for pre-operative hair removal. The Joint Commission standard for pre-operative hair removal.

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Adapted from Better in Care Improvements Project (SCIP). Specifications manual for national hospital inpatient quality measures v4.3b.

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BACKGROUND: Concerns regarding the safety of transfused blood have led to the development of a range of interventions to minimize blood loss during major surgery. Anti-fibrinolytic drugs are widely used, particularly in cardiac surgery, and previous reviews have found them to be effective in reducing blood loss, the need for transfusion, and the need for re-operation due to continued or recurrent bleeding. In the last few years questions have been raised regarding the comparative performance of the drugs. The safety of the most popular agent, aprotinin, has been challenged, and it was withdrawn from world markets in May 2008 because of concerns that it increased the risk of cardiovascular complications and death. OBJECTIVES: To assess the comparative effects of the anti-fibrinolytic drugs aprotinin, tranexamic acid (TXA), and epsilon aminocaproic acid (EACA) on blood loss during surgery, the need for red cell blood (RBC) transfusion, and adverse events, particularly vascular occlusion, renal dysfunction, and death. SEARCH STRATEGY: We searched the Cochrane Injuries Group’s Specialised Register (July 2010), Cochrane Central Register of Controlled Trials (The Cochrane Library 2010, Issue 3), MELDINE (Ovid SP) from July 1950 to July 2010, EMBASE (Ovid SP) from July 1950 to July 2010. Searches were updated in July 2010. References in identified trials and review articles were checked and study authors were contacted to identify any additional studies. The searches were last updated in July 2010. SELECTION CRITERIA: Randomised controlled trials (RCTs) of anti-fibrinolytic drugs in adults scheduled for non-urgent surgery. Eligible trials compared anti-fibrinolytic drugs with placebo (or no treatment), or with each other. DATA COLLECTION AND ANALYSIS: Two authors independently assessed trial quality and extracted data. This version of the review includes sensitivity analyses excluding trials authored by Prof. Joachim Boldt. MAIN RESULTS: This review summarises data from 212 RCTs that recruited over 25,000 participants. Data from the head-to-head trials suggest an advantage of aprotinin over the three analogues TXA and EACA in terms of reducing perioperative blood loss, but the differences were small. Compared to control, aprotinin reduced the probability of requiring RBC transfusion by a relative 34% (95% CI 0.64, 0.85; confidence interval 0.46 to 0.72). The RR for RBC transfusion with TXA was 0.63 (95% CI 0.53 to 0.70) and was 0.82 (95% CI 0.67 to 0.99) with EACA. When the pooled estimates from the head-to-head trials of the three antifibrinolytes analogues were compared to antifibrinolytic alone, aprotinin appeared more effective in reducing the need for RBC transfusion (RR 0.66, 95% CI 0.56 to 0.80). Aprotinin reduced the need for re-operation due to bleeding by a relative 54% (RR 0.46, 95% CI 0.34 to 0.64). This translates into an absolute risk reduction of 2% and a number needed to treat (NNT) of 50 (95% CI 15 to 159). A similar trend was observed for rates of vascular occlusion, renal dysfunction, and death.

BACHRACHLB: Perioperative mortality after cardiac surgery has decreased in recent years although postoperative mortality is still significant. Although there is evidence that perioperative goal-directed haemodynamic (GDT) therapy may reduce surgical mortality and morbidity in non-cardiac surgical patients, the data are less clear after cardiac surgery. The objective of this review is to perform a meta-analysis on the effects of perioperative GDT on mortality, morbidity, and length of hospital stay in cardiac surgical patients. METHODS: We conducted a systematic review using Medline, EMBASE, and the Cochrane Controlled Clinical Trials Register. Additional sources were sought from experts. The inclusion criteria were randomised controlled trials, mortality reported as an outcome, pre-emptive haemodynamic intervention, and cardiac surgical population. Included studies were examined in full and assessed for quality, subgroup analysis, and sensitivity analysis where possible. Data synthesis was obtained using odds ratio (OR) and mean difference (MD) for continuous data with 95% confidence interval (CI) using a random-effects model. RESULTS: From 4986 potential studies, 5 additional sources were sought from experts. The inclusion criteria were randomized controlled trials, mortality reported as an outcome, pre-emptive haemodynamic intervention, and cardiac surgical population. Included studies were examined in full and assessed for quality, subgroup analysis, and sensitivity analysis where possible. Data synthesis was obtained using odds ratio (OR) and mean difference (MD) for continuous data with 95% confidence interval (CI) using a random-effects model. RESULTS: This review summarises data from 212 RCTs that recruited over 25,000 participants. Data from the head-to-head trials suggest an advantage of aprotinin over the three analogues TXA and EACA in terms of reducing perioperative blood loss, but the differences were small. Compared to control, aprotinin reduced the probability of requiring RBC transfusion by a relative 34% (95% CI 0.64, 0.85; confidence interval 0.46 to 0.72). The RR for RBC transfusion with TXA was 0.63 (95% CI 0.53 to 0.70) and was 0.82 (95% CI 0.67 to 0.99) with EACA. When the pooled estimates from the head-to-head trials of the three antifibrinolytes analogues were compared to antifibrinolytic alone, aprotinin appeared more effective in reducing the need for RBC transfusion (RR 0.66, 95% CI 0.56 to 0.80). Aprotinin reduced the need for re-operation due to bleeding by a relative 54% (RR 0.46, 95% CI 0.34 to 0.64). This translates into an absolute risk reduction of 2% and a number needed to treat (NNT) of 50 (95% CI 15 to 159). A similar trend was observed for rates of vascular occlusion, renal dysfunction, and death.
This article describes the prevention of venous thromboembolism (VTE) and is a part of the Antithrombotic and Thrombolytic Therapy: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines (8th Edition). Grade 3 recommendations are strong and indicate that the benefits do or do not outweigh risks, burden, and costs. Grade 2 suggestions imply that individual patient values may lead to different choices (for a full discussion of the grading, see the "Grades of Recommendation" chapter by Guyatt et al.). Among the key recommendations in this chapter are the following: we recommend that every hospital develop a formal strategy that addresses the prevention of VTE (Grade A). We recommend against the use of aspirin alone as thromboprophylaxis for any patient group (Grade A), and we recommend that mechanical methods of thromboprophylaxis be used primarily for patients at high bleeding risk (Grade A) or possibly as an adjunct to anticoagulant thromboprophylaxis (Grade A). For patients undergoing major general surgery, we recommend thromboprophylaxis with a low-molecular-weight heparin (LMWH), low-dose unfractionated heparin (UH), or fondaparinux (each Grade A). We recommend routine thromboprophylaxis for all patients undergoing major gynecologic surgery or major, open urologic procedures (Grade A) for both groups), with LMWH, UH, fondaparinux, or intermittent pneumatic compression (IPC) for patients undergoing elective hip or knee arthroplasty. We recommend the use of the following three anticoagulant agents: LMWH, fondaparinux, or a vitamin K antagonist (VKA) international normalized ratio (INR) target, 2.5; range, 2.0 to 3.0 (each Grade A). For patients undergoing hip fracture surgery (HFS), we recommend the routine use of fondaparinux (Grade A), LMWH (Grade A), a VKA (INR target, 2.5; range, 2.0 to 3.0) (Grade A), or UH (Grade A) (each Grade A). We recommend that patients undergoing hip or knee arthroplasty or HFS receive thromboprophylaxis for a minimum of 10 days (Grade A). For hip arthroplasty and HFS, we recommend continuing thromboprophylaxis > 10 days and up to 30 days (Grade A). We recommend that all major trauma and all spinal cord injury (SCI) patients receive thromboprophylaxis (Grade A). In patients admitted to hospital with an acute medical illness, we recommend thromboprophylaxis with LMWH, UH, or fondaparinux (each Grade A). We recommend that, on admission to the ICU, all patients be assessed for their risk of VTE, and that most receive thromboprophylaxis (Grade A).
Discharge Process


Medication Reconciliation

Research: An emergency department discharge program to decrease hospital readmission: a randomized trial. Avni intern Med. 2009;146; I(5): 518-87. PMID: 19569007. BACKGROUND: Emergency department visits and rehospitalization are common after hospital discharge. OBJECTIVE: To test the effects of an intervention designed to minimize hospital utilization after discharge. DESIGN: Randomized trial using block randomization of 6:6:6. Randomly assigned index cards were placed in opaque envelopes labeled consecutively with study numbers, and participants were assigned a study group by revealing the index card. SETTING: General medical service at an urban, academic, safety-net hospital. PATIENTS: 740 English-speaking hospitalized adults (mean age, 64.9 years). INTERVENTION: A nurse discharge advocate worked with patients during their hospital stay to arrange follow-up appointments, confirm medication reconciliation, and conduct patient education with an individualized intervention checklist that was sent to their primary care provider. A clinical pharmacist called patients 2 to 4 days after discharge to reinforce the discharge plan and review medications. Participants and providers were not blinded to treatment assignment. MEASUREMENTS: Primary outcomes were emergency department visits and hospitalizations within 30 days of discharge. Secondary outcomes were self-reported preparedness for discharge and frequency of primary care provider follow-up within 30 days of discharge. Research staff doing follow-up were blinded to study group assignment. RESULTS: Participants in the intervention group (n = 370) had a lower rate of hospital utilization than those receiving usual care (n = 348) (0.214 vs. 0.461; per person; per month; incidence rate ratio, 0.499; 95% CI, 0.355 to 0.897; P <.001): The intervention was most effective among participants with hospital utilization in the 6 months before index admission (P =.016). Adverse events were not assessed; these data were collected but are still being analyzed. INTERVENTION: This was a single-center study in which not all potentially eligible patients could be enrolled, and outcome assessment sometimes relied on participant report. CONCLUSION: A package of discharge services reduced hospital utilization within 30 days of discharge. RUNDING: Agency for Healthcare Research and Quality and National Heart, Lung, and Blood Institute, National Institutes of Health.
OBJECTIVES: Patient-reported outcomes (PROs) are essential when evaluating many new treatments in health care, yet, current measures have been limited by a lack of precision, standardization, and comparability of scores across studies and diseases. The Patient-Reported Outcomes Measurement Information System (PROMIS) provides item banks that offer the potential for efficient (minimizes item number without compromising reliability), flexible (enables optional use of interchangeable items), and precise (has minimal error in estimate) measurement of commonly studied PROs. We report results from the first large-scale testing of PROMIS items.

STUDY DESIGN AND SETTING: Fourteen item pools were tested in the U.S. general population and clinical groups using an online panel and clinic recruitment. A scale-setting subsample was created reflecting demographics proportional to the 2000 U.S. census. Item banks were calibrated on a sample of 21,133, measuring components of self-reported physical, mental, and social health, along with a 10-item Global Health Scale. Short forms from each bank were developed and compared with the overall bank and with other well-validated and widely accepted (“legacy”) measures. All item banks demonstrated good reliability across most of the score distributions. Construct validity was supported by moderate to strong correlations with legacy measures.

CONCLUSION: PROMIS item banks and their short forms provide evidence that they are reliable and precise measures of generic symptoms and functional reports comparable to legacy instruments. Further testing will continue to validate and test PROMIS items and banks in diverse clinical populations.