

Perioperative Medicine

Total knee arthroplasty volume, utilization, and outcomes among Medicare beneficiaries 1991–2012. JAMA 2012; 308:12227–36.

Total knee arthroplasty is one of the most common and costly surgical procedure performed in the United States. A cohort of more than 3 million patients who underwent primary total knee arthroplasty and 300,000 patients who underwent revisions were examined for volumes, per capita utilization, length of stay, readmission rates, and adverse outcomes. There was an impressive increase in volumes between 1991 and 2010 (161.5% for primary and 105.9% for revision arthroplasty; fig. 1). For both primary and revision total knee arthroplasty, length of stay significantly decreased, whereas adverse events resulting in readmission remained stable or increased, particularly as a result of infectious complications.

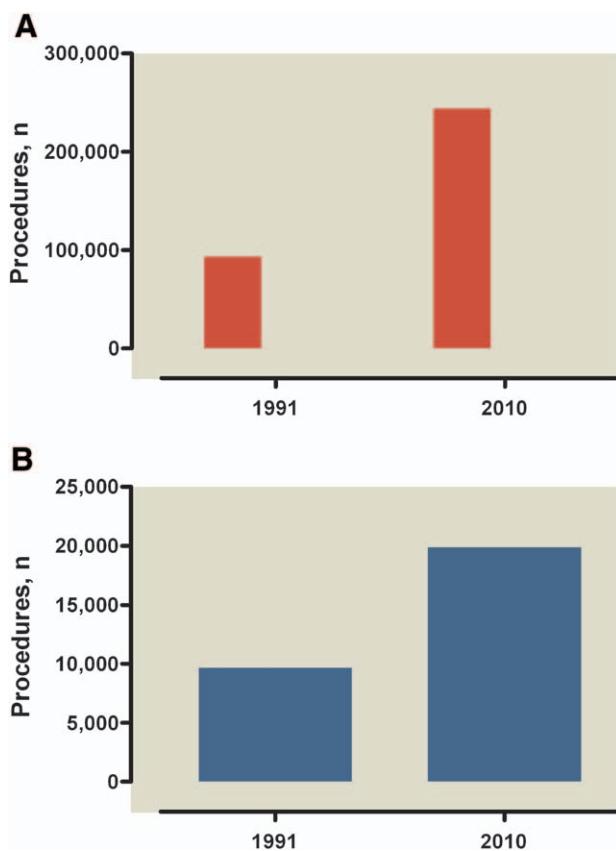


Fig. 1. Primary (A) and revision (B) total knee arthroplasty Medicare volumes in 1991 and 2010.

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Surgical *versus* conventional therapy for weight loss treatment of obstructive sleep apnea. JAMA 2012; 308:1142–9.

The goal of this randomized controlled trial was to compare the effectiveness of surgically induced *versus* conventional weight loss in patients with obstructive sleep apnea. Sixty patients with a body mass index between 35 and 55 with apnea sleep syndrome recently diagnosed and an apnea–hypopnea index of more than or equal to 20 events were included. The primary outcome was change in apnea–hypopnea index scored by polysomnography by staff blinded to randomization between baseline and 2-yr follow-up. Weight loss was 5.1 kg (CI: 0.8–9.3) in the conventional weight loss program *versus* 27.8 kg (CI: 20.9–34.7) in the bariatric surgery group (fig. 2). Significant improvement in the physical component of the SF-36 was observed in the bariatric surgery group compared with the conventional program. However, there was no statistically significant difference in the reduction of apnea–hypopnea index between groups. These results suggest that caution should be used in counseling patients with obstructive sleep apnea about the benefits of bariatric *versus* conventional strategy for weight loss.

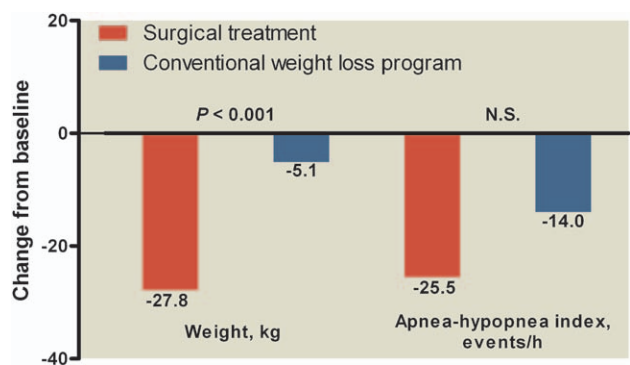


Fig. 2. Mean changes in weight and apnea–hypopnea index in patients after weight loss intervention.

Routine *versus* clinically indicated replacement of peripheral intravenous catheters: A randomized controlled equivalence trial. Lancet 2012; 380:1066–74.

Replacement of peripheral intravenous catheters is recommended every 72–96 h, but the effectiveness of this practice is not well established. This multicenter, randomized, non-blinded equivalence trial of 3,283 patients compared routine *versus* on-demand catheter removal. Phlebitis during catheterization or 48 h after removal was the primary endpoint. No difference was found in phlebitis incidence (7% in each

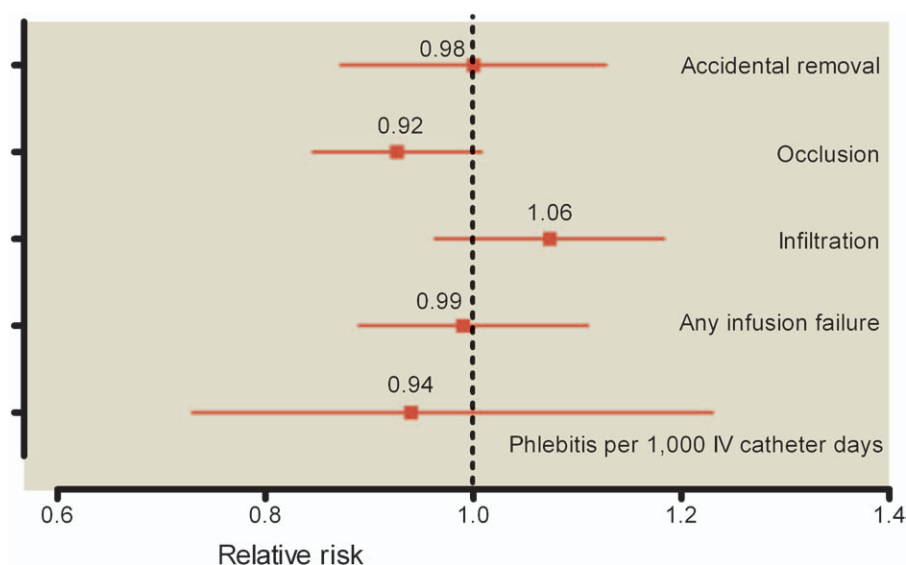


Fig. 3. Hazard ratio for study outcomes based on clinically indicated *versus* routine catheter replacement. IV = intravenous.

arm) or in secondary endpoints (fig. 3). This study strongly supports that catheters should be removed as clinically indicated, which will also be cost-saving.

Mortality after surgery in Europe: A 7-day cohort study. *Lancet* 2012; 380:1059–65.

Outcomes after noncardiac surgery were reported in this prospective, international, multicenter survey. Data reporting on consecutive surgical patients older than 16 yr were collected in 498 hospitals of 28 European countries between April 4, 2011, and April 11, 2011. The primary endpoint was in-hospital mortality. Of the 46,539 patients included, 1,855 (4%) died before hospital discharge. Marked differences in mortality between countries were observed, ranging from 1.2% for Iceland to 21.2% for Latvia. The mortality rates for patients undergoing inpatient noncardiac surgery were higher than anticipated. Strategies for improving care for this patient population are urgently needed in some European countries.

Critical Care Medicine

Continuous electroencephalography monitoring of early prediction of neurological outcome in postanoxic patients after cardiac arrest: A prospective cohort study. *Crit Care Med* 2012; 40:2867–75.

Since the introduction of mild therapeutic hypothermia, the predictive values of clinical, biochemical, and electrophysiologic variables of poor outcome after cardiac arrest have become uncertain. In this prospective cohort study, the authors examined the sensitivity and specificity of continuous electroencephalography and daily somatosensory evoked potential recordings during the first 5 days of admission or

discharge from the intensive care unit of patients with cardiac arrest. After 12 h of resuscitation including mild hypothermia, 43% of the patients with good neurologic outcome (assessed at 6 months by a Cerebral Performance Category score of 1–2) exhibited diffuse, slow electroencephalogram rhythms, whereas this was never observed in patients with poor neurologic outcome (Cerebral Performance Category score of 3–5). Low-voltage and isoelectric electroencephalogram patterns had a 68% (CI: 50–81%) negative predictive value for poor neurologic outcome compared with a 55% (CI: 41–60%) for the absence of bilateral somatosensory evoked potentials. Electroencephalograph monitoring may be of value in the prognostication of long-term neurologic outcome of patients treated with mild hypothermia after cardiac arrest.

Hypoglycemia and the risk of death in critically ill patients. *N Engl J Med* 2012; 367:1108–18.

Whether hypoglycemia leads to death in critically ill patients is unclear. In this study, 6,026 intensive care unit patients were randomly assigned to tight or conventional glucose control. Cox regression analysis was used after adjustment for treatment assignment and covariates. The adjusted hazard ratios for death among patients with moderate (2.2–3.9 mmol/L) or severe (<2.2 mmol/L) hypoglycemia, compared with those without hypoglycemia, were 1.41 (95% CI: 1.21–1.62) and 2.10 (1.59–2.77), respectively; $P < 0.001$. Duration of moderate hypoglycemia more than 1 day, distributive shock, and severe hypoglycemia in the absence of insulin treatment increased the association between hypoglycemia and risk of death. These results clearly establish an association (but do not prove causal relationship) between moderate and severe hypoglycemia and death in critically ill patients (table 1).

Table 1. Hazard Ratio for Death According to Occurrence of Moderate or Severe Hypoglycemia

	Deaths (%)	HR (95% CI)
Moderate hypoglycemia	774 (25)	1.81 (1.59–2.07)*
Severe hypoglycemia	79 (35)	3.21 (2.49–4.15)*

* $P < 0.001$.

HR = hazard ratio.

Pain Medicine

Brain networks predicting placebo analgesia in a clinical trial for chronic back pain. *Pain* 2012; dx.doi.org/10.1016/j.pain.2012.08.008

Investigators examined brain characteristics of placebo analgesia in patients with chronic back pain. These patients were enrolled in a double-blind, functional magnetic resonance imaging study that examined brain markers predicting placebo analgesia responses. Pain ratings and brain activation for spontaneous back pain were not different between the placebo and topical analgesic groups. However, on the basis of brain activity differences after placebo treatment, the authors identified that baseline functional connectivity between left medial prefrontal cortex and bilateral insula accurately predicted placebo responses. This was validated in an independent cohort. In addition, at baseline, high-frequency oscillations of left dorsolateral prefrontal cortex also predicted treatment responses and identified an additional set of functional connections. These results suggest that placebo responses can be identified before placebo treatment in chronic back pain, and that neuronal population

connections between prefrontal cognitive and other pain processing regions determine the probability of placebo response.

Education

Love letters: An anthology of constructive relationship advice shared between junior mentees and their mentors. *J Grad Med Educ* 2012; 4:287–9.

This article presents examples of conversations and actual interactions between mentors and mentees to provide further insight into this important relationship dynamic.

Mentees ask of mentors: (1) Give me explicit and meaningful feedback; (2) Dedicate time to meet and advise me; (3) Be engaged with my work; (4) Assist me to be discerning about what professional and personal activities to and not to do; (5) Guide my self-awareness to develop my niche; (6) When you do not have the expertise to help me, facilitate my networking to meet my need; and (7) Be my advocate!

Mentors ask of mentees: (1) Develop your own judgment, do not only depend on mine; (2) Be respectful of my time so I can allocate it to your best advantage; (3) Our relationship is a give and take, and you must fulfill your part; (4) Review and refine your goals and objectives on a continual basis so you do what is most productive and satisfying; (5) Be realistic about what you can/cannot and do/do not want to do; (6) Become acutely aware of your weaknesses and strengths; and (7) Be your own strong advocate.

The mentor–mentee relationship requires a major time commitment by both individuals. Like all “loving” relationships, effective interactions that are respectful of time, thrive and depend on clear and forthright communication.