

December 2012 Pulmonary Journal Club

Meddings JA, Reichert H, Rogers MA, Saint S, Stephansky J, McMahon LF. Effect of nonpayment for hospital acquired catheter associated urinary tract. Ann Intern Med 2012;157:305-12.

This observational study compared the rate of catheter associated urinary tract infection (CAUTI) in over 750,000 non-obstetrical adult admissions in 2007, with a comparable number of admissions in 2009 – before and after implementation of Medicare nonpayment for CAUTI. The study was carried out in 96 nonfederal acute care hospitals in Michigan. The authors found that although hospitals requested payment for urinary tract infections in over 10% of admissions, they rarely reported CAUTIs (CAUTI reported in 0.09% (95%CI: 0.06-0.12%) of admissions in 2007 vs. 0.14% (95%CI: 0.11-0.17%) in 2009). Only 2.6% of hospital-acquired UTIs were reported as catheter-associated. Nonpayment for CAUTI resulted in only 25 of 781,343 admissions in 2009. Therefore, the new Medicare rule did not decrease the rate of CAUTIs, or generate any significant cost savings.

Previous studies have convincingly demonstrated that urinary tract infections are among the most common hospital-acquired infections. Epidemiological studies suggest that 59-86% of all hospital-acquired UTIs are catheter-associated – highly contrary to the rate of 2.6% found in this database. Likewise, extrapolation of previously-published surveillance data indicates that approximately 8,000 CAUTIs would have been expected in a cohort of 780,000 admissions. The finding that nonpayment occurred in only 25 cases strikingly demonstrates the inadvisability of using claims data to identify CAUTI.

Under current Medicare rules, a hospital coder may only enter a diagnosis of CAUTI if it is clearly identified in a physician (or physician-surrogate) progress note. No microbiological data are required. CMS does not *require* coders to list *all* hospital-acquired conditions, and since hospitals are facing mounting financial pressure to lower their CAUTI rates, it's not surprising the rates reported are so low. It is a little surprising that the rates didn't *decrease* under the threat of nonpayment – this may indicate that most hospitals are not actively “gaming the system”, but simply not accurately tracking CAUTI in claims databases, regardless of the threat of financial penalty. Perversely, current law provides a strong disincentive to local efforts to improve surveillance of CAUTI, since accurate detection would likely increase nonpayment penalties, and could trigger reduction in Medicare payments for *all* DRGs for an institution that falls into the lowest quartile of hospital performance in 2015.

The diagnosis of CAUTI is often difficult to make with any degree of certainty by a physician at the bedside. Symptoms of UTI are less specific and sensitive in hospitalized patients – especially those with indwelling Foley catheters. The clinical diagnosis is largely based on quantitative analysis of pyuria and bacteruria, both of which are highly dependent on urine collection technique. Until details of bedside diagnosis of CAUTI are formalized, no amount of

retrospective chart review by billing coders is likely to provide an accurate tally of CAUTI.

Guideline advocates, researchers and our Federal government ought to quit using billing codes as surrogates for clinical outcomes. Personally, I believe the best approach to prevent CAUTI will follow from heightened awareness of preventive strategies by bedside clinicians. As a profession, we are already highly motivated to do what's best for our patients, even without the questionable benefit of artificial (and sometimes misguided) incentives.

Messerli FH. Chocolate consumption, cognitive function, and Nobel laureates. *New Engl J Med* 2012;367:1562-4.

This article describes an epidemiological study that showed a strong correlation between chocolate consumption and per capita Nobel laureates in a comparison of 22 countries. The correlation coefficient ($r=0.79$, $p<0.0001$) indicates that chocolate consumption alone accounts for almost two-thirds of all variation between countries in per capita Nobel laureates. The authors humorously use this analysis to point out how an inherently weak study design can yield ridiculous results with highly impressive-appearing statistical significance (Sir Austin Bradford Hill would be proud!).

“Ecological” epidemiological studies such as this are highly susceptible to error because the databases used to derive results contain no information on individual subjects (the basis of the “ecological fallacy”). Thus, results like those found in this study could occur even if there wasn't a single Nobel laureate that ever ate chocolate. A similar study might show that national hot dog consumption was correlated with a powerful Air Force – the two have nothing to do with one-another except that they are both somewhat “American” traits.

I was tempted to write a letter-to-the-editor in response to this article, referencing a fictional study in which we had found that it was not chocolate consumption, but rather blowing an alphorn while wearing lederhosen, that produced more Nobel laureates. Biological plausibility is supported by improved cerebral perfusion secondary to increased thoracic bellows strength and augmented preload resulting from compression of lower extremity capacitance veins.

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