In Reply: Drs Utter and Romano have made important contributions to society’s ability to measure patient safety using patient safety indicators based on administrative (billing) data. But their response to our article is puzzling. Our central claim was that billing data cannot be relied on to simultaneously measure quality, publicly report quality, and pay for performance. If they are, the ability to measure true changes in quality will be lost.

Our secondary claim was that there is currently no substitute for billing data as a widely available basis for measuring outcomes. We concluded that there is an urgent need to develop alternate data sources not currently used for public reporting or reimbursement that will provide time-consistent quality measures.1

Rather than dispute our main claim, Utter and Romano state that a consultant report finds that the 2008 decreases in patient safety indicator 5 (leaving a foreign object in the body during surgery) and patient safety indicator 7 (CLABSI) reporting were only 15% and 23% (instead of the roughly 50% we found). This report2 uses data we cannot verify, uses annual instead of quarterly data, and shows decreases of 26% and 30% from fiscal 2008 to 2009.

Utter and Romano extract lower percentages from this report by including an increase in rates from 2009 to 2010, which is likely unrelated to the reimbursement change. Even if those percentages were accurate, our main message would remain unchanged. Decreases of this magnitude offer ample evidence that if payers stop paying for hospital-acquired conditions, many hospitals will stop billing for them. Utter and Romano also do not dispute our secondary claim.

We agree that the determinants of gaming are the ease of doing so and the associated incentives. We disagree, however, that performance metrics based on administrative data are less susceptible to gaming than indirect measures of performance and measures that are purposely collected for quality measurement. Moreover, not billing for events that insurers will not pay for is not even gaming, in a sense. No rule requires billing for adverse events. If there was such a rule, we cannot imagine that it would be accompanied by a serious effort to audit the events for which hospitals are not billing.

The intent of hospitals is to offer safe, high-quality care; however, we contend that financial imperatives are often paramount when generating administrative data. Significant discretion exists in the documentation and coding of patient episodes. This point was underscored by a recent Inspector General report3 that found adoption of electronic medical records has led to higher billing levels without true changes in care. Gaming reflects manipulation of data to improve apparent performance rather than improving true performance.

In our view, for safety and quality metrics to reach their full potential, these metrics must rely more on primary data and hospitals must have internal operational incentives to make these measures accurate. Stated differently, hospitals need to have incentives to maintain and respond to accurate performance metrics because they are central to operational and financial performance, not because they are responding to external demands. It is debatable how to get there from here, but the need is clear.

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Overall prevalence

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Results. No significant change in overall smokeless tobacco prevalence occurred between 2000 (5.3%; 95% CI, 4.5% to 6.1%) and 2011 (5.2%; 95% CI, 4.2% to 6.1%) (Table). Downward trends were observed in the age groups of 9 to 11 years (AAPC, −4.6 [95% CI, −11.9 to 3.4]; P=.007 for linear trend) and 12 to 14 years (AAPC, −3.4 [95% CI, −5.3 to −1.4]; P=.02 for linear trend).

Conversely, prevalence increased in the age group of 15 to 17 years (AAPC, 0.9 [95% CI, −2.8 to 4.7]; P=.01 for linear trend). During 2000 through 2011, prevalence declined among middle school students (AAPC, −4.1 [95% CI, −5.7 to −2.4]; P=.02 for linear trend). No significant
changes were noted among high school students, or by race/ethnicity or sex.

Discussion. The prevalence of smokeless tobacco use among US youths did not change between 2000 and 2011 and remained generally low. However, subgroup differences were observed. The use of modified traditional smokeless tobacco products, such as moist snuff, coupled with lower taxes on smokeless tobacco products (vs cigarettes) may have contributed to the stable prevalence of smokeless tobacco (vs the declining trend for cigarettes).

In addition, use of flavors is not currently prohibited for smokeless tobacco products, unlike with cigarettes. The significant declines among respondents aged 14 years or younger and those in middle school may be attributable to the proliferation of bans and restrictions in many states on remote (mail order or Internet) sales of tobacco products coupled with the recent implementation of federal legislation enforcing age verification at points of purchase.

Despite these developments, significant increases were observed among those aged 15 to 17 years, whereas no significant changes were seen among respondents aged 18 years or older, suggesting that current access laws are not completely effective in preventing tobacco access among older adolescents. Furthermore, the promotion of smokeless tobacco use as an alternative to smoking is more likely directed at smokers, who are more likely to be older than younger adolescents.

This study is subject to limitations. First, insufficient data existed on smokeless tobacco type, and the analysis did not include newer smokeless tobacco products such as snus and dissolvable tobacco products, which may have resulted in an underestimation of smokeless tobacco prevalence. In addition, recall bias may have resulted in an underreporting of tobacco use. Nonetheless, these findings emphasize the need for evidence-based interventions to reduce smokeless tobacco use among youths.

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Author Contributions: Dr Agaku had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. Study concept and design: Agaku, Vardavas, Connolly. Acquisition of data: Agaku, Connolly. Analysis and interpretation of data: Agaku, Vardavas, Ayo-Yusuf, Alpert, Connolly. Drafting of the manuscript: Agaku, Vardavas. Critical revision of the manuscript for important intellectual content: Agaku, Vardavas, Ayo-Yusuf, Alpert, Connolly. Statistical analysis: Agaku, Vardavas, Ayo-Yusuf. Obtained funding: Connolly. Study supervision: Vardavas.

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CORRECTION

Incorrect Sentence: In the Preliminary Communication titled “Effect of Shock Wave-Facilitated Intracoronary Cell Therapy on LVEF in Patients With Chronic Heart Failure: The CELLWAVE Randomized Clinical Trial,” published in the April 17, 2013, issue of JAMA (2013;309[15]:1622-1631), a sentence was incorrect. In the last paragraph of the Results section, the first sentence beneath the “Clinical Outcome” heading should have read “As shown in the analysis of multiple and recurrent clinical events (eFigure 3), the overall frequency of MACEs was significantly reduced in patients receiving shock wave + BMCs (32 events) compared with patients receiving shock wave + placebo infusion (61 events) or placebo shock wave + BMCs (18 events) (hazard ratio, 0.58 [95% CI, 0.40-0.85]; P = .02).” This article has been corrected online.