WHY CARDIOTHORACIC SURGEONS MUST TWEET AND BLOG

To the Editor:

Health care systems around the world are under stress and are being reformed.¹ New models of care are required for a rapidly aging population. Care that is currently hospital based must be transferred to the community. Cardiothoracic surgery provides treatments that may be very effective but remain very invasive and expensive. The specialty lags behind general surgery, which has changed dramatically during the past 10 to 15 years. Many cardiac treatments, previously undertaken through open surgery, are now available with a catheter, carried out by cardiologists. Although percutaneous coronary intervention numbers remain stable, numbers of coronary artery bypass grafting operations, for many years staple fare for cardiac surgeons, are falling precipitously in both the United States² and the United Kingdom. A revolution to reinvigorate the specialty is required from within before it is seen to be punching increasingly above its weight.

In the United Kingdom, there is a communications company that uses the slogan, "We're Better Connected." These 3 words crystallize the transformative potential of social media to reinvigorate our specialty.

Since the early days of the Internet, e-mail has been the mainstay of electronic communication. Protocol industry changes, referred to as "web 2.0," have now made the ability to communicate and share instantaneously possible. This is achieved through instant messaging and social media such as Twitter and Facebook. Browsers on desktop computers, smart phones, and touch-screen tablet devices have inbuilt sharing capabilities. It is now possible to share any digital content easily from any computer or phone or Internet site with like-minded members of a connected community.

Twitter is a microblogging site³ that has been embraced by both celebrities and more significantly the arts and political classes. Such social media have radically changed the way business is done in the arts and politics worlds in the West. Medicine and particularly surgery has been late in adopting this technology. In recent months, medical educationalists and those who are involved in forming health policy have had a presence on Twitter. A junior doctor and a medical student have recently demonstrated the amazing potential of social media by starting the world's first Twitter-based journal club.⁴ Every Sunday evening, hundreds of medical professionals from all over the world discuss a nominated paper. Associations and journals are also now sharing content on Twitter.⁵

These are the tools that cardiothoracic surgeons around the world must use to bring about the required transformation. Sharing information from both within and without the cardiothoracic bubble will be key. The instantaneous sharing of proceedings from meetings (not necessarily cardiothoracic) with surgeons from all over the world is now possible. It is up to all cardiothoracic surgeons the world over, both as individuals and as societies and associations, to make the effort to start this global movement. All should be encouraged to start blogs at free-use sites such as Blogger, WordPress, Posterous and Tumblr. The content should be shared through Twitter or maybe Facebook. Like-minded folk will find each other, and soon an online community with the will to transform this specialty will be created.

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CONFLICTING META-ANALYTIC RESULTS: POTENTIAL FOR CONFUSION IF LEFT UNEXPLAINED

To the Editor:

We read with interest the recent meta-analysis by Biancari and colleagues.¹ The use of clopidogrel before coronary artery bypass grafting remains a controversial issue. Our own recent meta-analysis² used a similar series of studies but focused specifically on the effects of acute coronary syndrome and case urgency. We showed that both acute coronary syndrome status and urgency influenced mortality and adverse outcomes. Biancari and colleagues¹ suggested that aggregation of randomized, controlled trials identified a reduction in postoperative mortality with preoperative clopidogrel exposure, whereas observational studies produced an opposite finding. They also showed that emergency cases had a nonsignificant impact on mortality, which is clinically unexpected.

Meta-analytic studies may have conflicts with one another, especially when study inclusion criteria differ. Furthermore, there are statistical methodologic differences worth noting relative to our own study.

First, we disagree with the exclusion of studies in which the control subjects had taken clopidogrel until 5 to 7 days before coronary artery bypass grafting. This excluded group is exactly the important group that must be assessed, because it will contain many patients with recent acute coronary syndrome, patients with stent placement, and higher risk patients requiring ongoing clopidogrel therapy. Because those undergoing operation while they are receiving clopidogrel are likely a similar cohort, inclusion of patients who received clopidogrel to that point would make the comparison more valid.

Second, Biancari and colleagues¹ predominantly used a fixed-effects model and only used the random-effects model when statistical heterogeneity was greater than a predefined cutoff. We believe that a random-effects model is more appropriate when reviewing surgical cohorts, which by their nature have significant clinical heterogeneity. Furthermore, nonsignificant results of tests of heterogeneity do not guarantee homogeneity between studies included in the meta-analysis, and sources of methodologic or clinical heterogeneity should be explored.³

The more conservative nature of the random-effects model provides more realistic confidence intervals for groups that can differ wildly between surgical centers as a result of surgical experience, the percentage of urgent cases, and the cornucopia of different adjunct medical therapies used.

Finally, the debate between fixed- and random-effects models is not new. The general consensus remains that it is unreasonable to assume that even with adjustment of multiple covariates all between-trial variation can be accounted for, and thus the random-effects model is preferable.^{4,5}

From a scientific point of view, reporting the results of both models allows readers to judge more objectively through sensitivity analysis the robustness of the meta-analytic

findings. This is particularly relevant when the fixed-effects model for postoperative death demonstrates a lower 95% confidence interval, just marginally above the 1-null effect. On reassessment with a random-effects model, we find that their effect size becomes statistically nonsignificant, with risk ratio of 1.28 (95% confidence interval, 0.99–1.66).

The findings regarding reduced postoperative myocardial infarction and increased blood product use and reoperation remain valid.

Although the statistical change in mortality may appear small, it reflects the importance of appropriate methodologic rigor and accurate reporting. The original choice of model may have been influenced by the *P* value generated.

We conclude that with a change in the statistical model from fixed to random effects, the conclusion of Biancari and colleagues¹ that observational studies show significantly increased mortality no longer holds true.

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Reply to the Editor:

On the basis of their own recent meta-analysis on this topic,¹ Nijjer and colleagues commented on the results of our meta-analysis about the effects of preoperative exposure to clopidogrel before coronary artery bypass grafting.² Nijjer and colleagues raised concerns regarding our methodology, which could have affected the results of our meta-analysis. In our study, we used a fixed-effects model when heterogeneity was considered unimportant. We do agree with Nijjer and colleagues that a random-effects model is more appropriate when analyzing nonrandomized studies. In fact, we used the latter method in our most recent meta-analyses. Here, we report the results of using a random-effects model in all outcome end points (Table 1). The use of this method provided similar results to those published, but according to random-effects analysis, the increased risk of immediate postoperative mortality for patients exposed to clopidogrel only tended to be significant (risk ratio, 1.28; 95% confidence interval, 0.99–1.66; *P* = .06).

Nijjer and colleagues disagreed about our decision to exclude from the analysis those studies including control subjects exposed to clopidogrel for whom the drug was discontinued 5 to 7 days before surgery. Even if Nijjer and colleagues argue that these control subjects would include