



The NEW ENGLAND JOURNAL of MEDICINE

EDITORIAL OFFICES

July 15, 2011

The New England Journal of Medicine
10 Shattuck St., 6th Floor
Boston, MA 02115

The Honorable Henry A. Waxman
2204 Rayburn
House Office Building
Washington, DC 20515

Dear Congressman Waxman:

My name is Gregory Curfman, MD, and I am the executive editor of the *New England Journal of Medicine*. I am writing to provide you with commentary about two recent reports on the regulation of medical devices entitled, respectively, “FDA Impact on U.S. Medical Technology Innovation” and “Competitiveness and Regulation: The FDA and the Future of America’s Biomedical Industry.” I do so both because of my personal interest in medical device regulation and also because part of the medical journal I edit is focused on the publication of new research on medical devices.

The first report was written by two authors, Dr. Joshua Makower, who has numerous financial relationships with the medical device industry, and Aabed Meer, a medical student who has very little experience in medical research. It was surprising that Dr. Makower’s financial relationships were not individually identified in the disclosure note in the report, since these relationships clearly constitute a significant conflict of interest on Dr. Makower’s part in regard to this report. It appears from the disclosure note that the authors were paid by the Medical Device Manufacturers Association to prepare this report. If this is the case, it should be explicitly stated in the disclosure note, since this would constitute a conflict of interest with respect to this report.

Although the report refers to this work as a “study,” it is not really a study at all. This is an opinion piece that is dressed up to look like a research study. In fact, there are so many flaws in design and execution that the authors’ conclusions are rendered essentially meaningless. From the start, the authors had a specific agenda to reach particular conclusions, and they conducted the work in a biased manner that would give them the result that they wanted.

The 20 percent response rate of the medical technology companies surveyed is woefully inadequate. In contrast, we would never publish in our journal a survey that did not have a response rate of at least 60 percent or higher. The 20 percent of companies that did respond were clearly subject to substantial selection bias, i.e. those companies that were unhappy with the regulatory process at FDA were more likely to take the time to respond, thus biasing the results.

All of the numerical information was collected by telephone interview or in an online format. Of note, none of the information was independently validated by the authors. Ordinarily, in a rigorous study there should be validation of at least a subgroup of companies to ensure that the data they are reporting are accurate. The Methodology section of the report indicates that PricewaterhouseCoopers LLP verified the study results. However, it does not appear that the original data were independently verified through an audit to ensure their accuracy, and this is what would need to be done.

The conclusions about the comparison of US and EU approval times are especially troublesome. These conclusions were based solely on the subjective responses of the biased sample of survey respondents. The comparison of the US and EU does not include any formal assessment of the outcome of the regulatory procedures, especially whether the assessment of efficacy and safety were more complete and rigorous in the US. A valid comparative study of device regulation in the US and EU must include information about the outcome of the regulatory process, not just which agency was more “reasonable” in the eyes of the technology companies.

Finally, none of the quantitative data in the report include measures of variation in the data (such as standard deviations or confidence intervals), and most surprisingly there is no statistical analysis to assess the significance of differences.

Overall, this is a very unsatisfactory report that would not merit publication in a respected peer-reviewed medical journal.

The second report comes from the California Healthcare Institute, a policy-research and advocacy organization, and among its clients are medical device companies. The report is written exclusively from a business perspective and does not address the important medical or public health dimensions of medical devices. One part of the report is particularly revealing in this regard. In the section entitled “Regulatory Risk: Spotlight on the FDA,” the report boldly notes that “From investors’ perspective, regulation has always been a risk factor.” The report attempts to paint regulation itself as a risk, and – astonishingly – leaves unmentioned the fact that the principal purpose of FDA regulation in the first place is to mitigate potentially serious risks to patients from ineffective or faulty medical devices.

Another part of the report discusses the 510(k) pathway for expedited approval of devices in which there has been only an incremental change in a previously approved device. One sentence reads: “Devices, in contrast, may be altered in minor ways – switching to a new

metal alloy, installing a longer-lasting battery, using a better polymer – so that the effects on the product’s safety and efficacy profile are predictable.” This sentence is particularly ironic in the light of the recent disaster involving metal-on-metal artificial hip implants. Hip implants originally consisted of a metal ball inserted into a plastic cup. In newer models the plastic was replaced by a metal alloy (“metal-on-metal” design), which was generally regarded as a major innovation. However, the implants did not undergo clinical trials before marketing, only bench testing. Not long after FDA approval, reports of failure of the metal-on-metal implants and shedding of metallic debris began to surface, and upwards of tens of thousands of patients have been affected. Thus, an apparently “minor” alteration in design – replacement of plastic with metal alloy – resulted in a public health nightmare.

This example highlights the naiveté of the report from the California Healthcare Institute. The report reflects little or no understanding of the complexity of medical devices and the sometimes unpredictable adverse health consequences of seemingly minor changes in design. In general, this report advocates a potentially dangerous position – that regulation stifles innovation – while in fact reasonable regulation is essential in order to avoid the lure of so-called “innovations” that may in fact result in unsafe or ineffective medical devices and adverse health outcomes for patients.

In summary, for the reasons discussed these two reports together do a serious disservice to medicine and the health of the public.

Sincerely,

A handwritten signature in blue ink that reads "Gregory D. Curfman". The signature is written in a cursive, flowing style.

Gregory D. Curfman, MD
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Boston, Massachusetts