National Joint Replacement Registry

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The sage philosopher and baseball great, Yogi Berra, once opined, "You can observe a lot just by watching." Perhaps it was the same wit who imparted the wisdom often heard in jest in orthopedics that "nothing ruins good results like follow-up!" Both of these sentiments have relevance when it comes to joint arthroplasty. The fact of the matter is that, while knee and hip arthroplasties are effective interventions for the treatment of degenerative arthritis (with durability, pain relief, and functional improvement in excess of 90% of patients at 10-15 years), each of us is familiar with examples of innovative implant designs and technologies, material changes, or surgical techniques that did not fulfill their promise. Recognizing those failures and reporting the information in peer-reviewed publications is often done in the United States by individual surgeons or arthroplasty centers, collectively. However, some data may be more effectively and responsibly shared by alternative means when real-time reporting is desirable. For instance, if a busy hip arthroplasty surgeon prospectively collects his data and at 2 years observes that 10% of a new femoral stem have loosened, using traditional means of reporting, it may take several months to gather the data, organize it, and write a manuscript. Several more months may lapse for the peer review and revision processes, followed by another 6 to 12 months before publication. By then, many more of these prostheses may be implanted with comparable failure rates, subjecting more patients to premature revision. The delay in data dissemination is problematic when there are concerns about the subpar performance and durability of a particular implant. As Von Knoch and Malchau argue in this issue of *The American Journal of Orthopedics,* the creation of a national joint replacement registry may therefore be the most responsible way to track and disseminate a large body of data in real time.

If trends are observed in a pooled registry, the impact for patients, surgeons, hospitals, payers, and implant manufacturers can be profound, particularly if that information is made available in "real time." The goal of a joint replacement registry is to track data related to knee and hip arthroplasties from all surgeons in the orthopedic community, who collectively perform the vast majority of joint replacements in the United States—not just the designers of those implants and super-specialized "experts."

It is anticipated that a national joint replacement registry will improve the ability of orthopedic surgeons to select implants or surgical techniques based on sound objective data, improve patient outcomes by identifying poorly performing implants and surgical techniques, and reduce the risk of revision arthroplasties. While the precise mode of failure may not be reported in a national joint registry, technical factors such as surgical approach, implant type, bearing surfaces, and method of polyethylene sterilization can be captured, providing insight into features that may influence performance and durability of knee and hip arthroplasties. The potential cost savings that may be realized by reducing the need for secondary and revision surgeries could potentially exceed $13 billion over 20 years.

One of the challenges will be determining how to fund such an ambitious endeavor, which is estimated to cost between $18 million and $20 million a year.[1] An additional "tax" for the creation and maintenance of a national joint registry or, worse yet, penalties for failure to comply will be a burden that few of us would be willing to accept. It would be important therefore for all stake-

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holders—patients, government, payers, hospitals, implant manufacturers, and surgeons—to have a seat at the table to determine how best to fund the registry. While the intentions of a registry are philosophically sound, the economic burden, consumption of resources, and commitment of time by orthopedic surgeons who may see little incentive to participate could limit broad endorsement and involvement by the orthopedic community. A method for data entry must be created that virtually eliminates the need for active effort by orthopedic surgeons, who already are overburdened by paper work and administrative and other responsibilities that detract from their primary concern, namely patient care. Taking the onus of data entry out of the hands of the surgeons and their staff will also limit the potential for reporting bias.

I have questions that have likely been addressed by the American Academy of Orthopaedic Surgeons (AAOS) task force focusing on the development of a national registry. I would like to believe that they have also been considered by the legislative teams who have proposed a bill to create a government-mandated registry. What data will be collected? Who will manage the data? How do we minimize reporting bias, ensure accurate input of data, and maximize compliance? What role will hospital staff play in inputting data? If the government legislates for a registry, will compliance be mandatory? Will there be incentives or abatements passed on to hospitals or surgeons for compliance? Will there be penalties for non-reporting? What are the implications for a surgeon who chooses to use an implant that performs poorly in the registry despite a good track record in the surgeon's personal experience with that prosthesis? Will there be assurances for patients, physicians, and hospitals that confidentiality will be preserved? What safeguards will be instituted to limit personal or organizational liability for surgeons, hospitals, and implant manufacturers?

While the logistics and practical concerns that surround the development, maintenance, financing, and implementation of a national joint replacement registry continue to be worked out, it is undeniable that "real-time" data collection and dissemination can be an invaluable mechanism for responsibly tracking implants and procedures and expeditiously disseminating that data to the key decision makers and stakeholders. Other than having access to the information, orthopedic surgeons should have a very limited active role in data entry in order to achieve greater participation and remove the potential for bias in reporting the requisite information. It has been said that "one ought not to reject the data merely because one does not like what the data implies."[2] Therein lies the crux and the potential value of a national joint replacement registry.

Author's Disclosure Statement

Dr. Lonner wishes to note that he is a paid consultant to and speaker for Zimmer, and he also receives royalties from Zimmer. In addition, Dr. Lonner notes that he is a paid consultant to and speaker for MAKO Surgical.

References

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