

## **Registry Participation is Our Professional Responsibility**

*Kenneth G. Shann, CCP*

*Massachusetts General Hospital, Boston, MA.*

In 1986 the New York Times ran a front-page story that the Healthcare Financing Administration, which in 2001 was renamed the Centers for Medicare and Medicaid Services, would release the names of hospitals that have mortality rates higher than the national average for coronary artery bypass surgery (CABG).<sup>1</sup> In response to this report and out of concern that administrative data is insufficient to measure the quality of care several cardiac surgery registries were developed including the New York State Cardiac Surgery Reporting System (CSRS), the Northern New England Cardiovascular Disease Study Group (NNE), and the Society of Thoracic Surgeons (STS) National Database. Since the late 80s participation in regional and national registries has grown and today would be considered standard practice.

Shortly after implementation the CSRS and NNE began reporting a reduction in mortality rates for CABG surgery.<sup>2,3</sup> The strategies were different but the efforts to collect and report data motivated quality improvement efforts and by 1992 New York State and Northern New England had the lowest mortality rates in the country for CABG surgery.<sup>4</sup>

We have enjoyed a steady decline in mortality rates for CABG over the last 25 years and our focus has shifted to minimizing morbidity after cardiac surgery. In order to better understand the association between cardiopulmonary bypass (CPB) and morbidity we need more context regarding the management of CPB. To that end the NNE developed their Perfusion Registry, AmSECT and now the Michigan State Quality Collaborative developed the PERForm Registry, in Australia and New Zealand they developed the Australian New Zealand Collaborative Perfusion Registry, and the Japanese developed their National Perfusion Registry.

Since their inception these registries and others like them have contributed significantly in three important areas:

- Guiding quality/process improvement work<sup>5,6</sup>
- Generating new knowledge<sup>7-12</sup>
- Benchmarking<sup>13,14</sup>

Participation in a clinical registry is our professional responsibility. Registries allow data to be collected across diverse patient populations and in much higher volume than any single center can achieve on their own. Multi-center data can then be used to generate new knowledge regarding the association between the management of CPB and patient outcome. In addition, registries allow us to benchmark our practice against our colleagues and highlight opportunities for process improvement. Contrary to some perceptions, the collection of data is not as timely as some may claim. Our Japanese colleagues report their data form, which is similar to the NNE and PERForm data forms, take an average of 15 minutes to complete.<sup>15</sup>

Perfusionists should consider participation in a registry no different than our responsibility to set-up, prime, manage, and break down the heart/lung machine.

### **References:**

1. <http://www.nytimes.com/1986/03/12/us/us-releasing-lists-of-hospitals-with-abnormal-mortality-rates.html?pagewanted=all>
2. Hannan EL, Kilburn H Jr, Racz M, et al. Improving outcomes of coronary artery bypass surgery in New York state. *JAMA*. 1994;271:761-766 .
3. O'Connor GT, Plume SK, Olmstead EM, et al. A regional intervention to improve the hospital mortality associated with coronary artery bypass graft surgery. The Northern New England Cardiovascular Disease Study Group. *JAMA*. 1996 Mar 20;275(11):841-6.
4. Peterson ED, DeLong ER, Jollis JG, et al. The effects of New York's bypass surgery provider profiling on access to care and patient outcomes in the elderly. *J Am Coll Cardiol*. 1998 Oct;32(4):993-9.
5. DioDato CP, Likosky DS, DeFoe GR, et al. Cardiopulmonary bypass recommendations in adults: The Northern New England experience. *J Extra Corpor Technol*. 2008;40:16-20.
6. Warren CS, DeFoe GR, Groom RC, et al. Variation in arterial inflow temperature: A regional quality improvement project. *J Extra Corpor Technol*. 2011;43:58-63.
7. DeFoe GR, Ross CS, Olmstead EM, et al. Lowest hematocrit on bypass and adverse outcomes associated with coronary artery bypass grafting. Northern New England Cardiovascular Disease Study Group. *Ann Thorac Surg*. 2001;71:769-76.
8. Groom RC, Rassias AJ, Cormack JE, et al. Highest core temperature during cardiopulmonary bypass and rate of mediastinitis. *Perfusion*. 2004;19:119-25.
9. Ellis MC, Paugh TA, Dickinson TA, et al. Nadir Hematocrit on Bypass and Rates of Acute Kidney Injury: Does Sex Matter? *Ann Thorac Surg*. 2015 Nov;100(5):1549-54.
10. Paugh TA, Dickinson TA, Martin JR, et al. Impact of Ultrafiltration on Kidney Injury After Cardiac Surgery: The Michigan Experience. *Ann Thorac Surg*. 2015 Nov;100(5):1683-8.
11. Goldberg J, Paugh TA, Dickinson TA, et al. Greater Volume of Acute Normovolemic Hemodilution May Aid in Reducing Blood Transfusions After Cardiac Surgery. *Ann Thorac Surg*. 2015 Nov;100(5):1581-7.
12. Newland RF, Baker RA, Mazzone AL, et al. Rewarming Temperature During Cardiopulmonary Bypass and Acute Kidney Injury: A Multicenter Analysis. *Ann Thorac Surg*. 2016 May;101(5):1655-62.
13. Baker RA, Newland RF, Fenton C, et al. Developing a benchmarking process in perfusion: a report of the Perfusion Downunder Collaboration. *J Extra Corpor Technol*. 2012 Mar;44(1):26-33.
14. Riley JB, Kavanaugh TA. Perfusion services national process improvement benchmarking. *J Extra Corpor Technol*. 1998;30:25-9.

15. Hibiya M, Kamei T, Yoshida K, et al. An Evaluation Trial of The National Perfusion Registry. *J Extra Corpor Technol.* 2014 Sep;46(3):258-61.