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New Study Shows OB Anesthesia Equally Safe When Provided by CRNAs or Anesthesiologists

Park Ridge, Ill.—Obstetrical anesthesia, whether provided by Certified Registered Nurse Anesthetists (CRNAs) or anesthesiologists, is extremely safe, and there is no difference in safety between hospitals that use only CRNAs compared with those that use only anesthesiologists, according to the results of a new study published in the January/February issue of *Nursing Research* (Vol. 56, No. 1, pp. 9-17).

The study, titled "Anesthesia Staffing and Anesthetic Complications During Cesarean Delivery" (www.nursingresearchonline.com), was a retrospective analysis undertaken by Daniel Simonson, CRNA, MHPA, chief anesthetist and managing partner of The Spokane Eye Surgery Center in Spokane, Wash.; Melissa Ahern, PhD, MBA, associate professor, Department of Health Policy and Administration, Washington State University, Spokane; and Michael Hendryx, PhD, associate professor, Department of Community Medicine, and research director, Institute of Health Policy Research, West Virginia University School of Medicine, Morgantown, W.V.

Simonson and his fellow researchers set out to identify differences in the rates of anesthetic complications for cesarean section in hospitals where the OB anesthesia is provided solely by CRNAs compared to hospitals where the OB anesthesia is provided solely by anesthesiologists in the state of Washington.

The results showed that there is no difference in rates of complications between hospitals that use only CRNAs compared with those that use only anesthesiologists. No difference was found in mortality rates either.

"The study results clearly demonstrate that OB anesthesia complications are no different between the CRNA-only and anesthesiologist-only staffing models," Simonson said. "Expectant mothers can have great confidence knowing that they and their babies will be safe in the care of a nurse anesthetist or an anesthesiologist.

"Further, hospital administrators and anesthesiology groups can comfortably consider variables other than provider safety or quality—such as provider availability, cost, and the percentage of Medicaid patients cared for at their facility—when staffing for obstetrical anesthesia," Simonson added.

The study involved 134,806 patients, including 33,236 who were cared for at hospitals whose OB anesthesia was staffed by CRNAs only, and 101,570 who were cared for at hospitals staffed by anesthesiologists only. Washington state hospital discharge data for 1993-2004 were obtained from the Comprehensive Abstract and Reporting System database and merged with data from a survey of anesthesia or medical staff at the two types of hospitals.

In the study sample there were 965 anesthetic complications and 17 deaths: 76 percent of the complications were classified as *less serious* according to the International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM), and only one of the deaths had an ICD-9-CM code associated with an anesthetic complication. The CRNA-only hospitals had a complication rate of 0.58 percent, while the anesthesiologist-only hospitals had a rate of 0.76 percent.

Regression analysis was used to adjust for independent variables such as hospital characteristics (geographic location, size, and teaching status), patient demographics (ages, primary payer, and type of admission), and patient comorbidities.

Several interesting patterns emerged from the data. The CRNA-staffed hospitals treated the greatest percentage of Medicaid, rural, teaching, urgent admission, and very young (under 17 years old) patients, while anesthesiologist-staffed hospitals had the greatest percentage of emergency admissions and older mothers (over 35 years old). Additionally, a substantially higher percentage of sicker patients were transferred to CRNA-only hospitals, a factor which could, potentially, affect the number of anesthetic complications at a facility. However, this did not prove to be the case.

"Hospitals and anesthesiology groups, particularly those in rural areas and those in medically underserved urban areas with large Medicaid populations, now have a possible long-term solution to their OB anesthesia staffing needs: greater use of CRNAs working without anesthesiologist supervision," Simonson said. He added that further studies are needed to validate the observations made from this study.

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