

THE JULY EFFECT: IMPACT OF THE BEGINNING OF THE ACADEMIC CYCLE ON CARDIAC SURGERY OUTCOMES IN A COHORT OF 70,616 PATIENTS

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Background: Surgical residents' level of experience may be at its nadir early in the academic year, meaning that academic seasonality, or the so-called July effect, could affect cardiac surgical outcomes.

Methods: Using prospectively collected data from the Department of Veterans Affairs Continuous Improvement in Cardiac Surgery Program (CICSP), we identified all (n = 70,616) cardiac surgical procedures performed between October 1997 and October 2007. Morbidity and mortality rates were compared between 2 periods of the academic year, one early (July 1st to August 31st, n = 11,975) and one later in the year (September 1st to June 30th, n = 58,641). A prediction model was constructed by using stepwise logistic regression modeling.

Results: Patient populations in the two periods were similar for most demographic and risk variables. Isolated coronary artery bypass grafting accounted for 76.7% and 75.8% of the procedures performed during the early and later periods, respectively (P = 0.03). There were more emergency procedures performed in the later period (4.3% vs. 3.4%; P > 0.001) compared to the early period. Morbidity rates did not differ significantly between the early (14.0%) and later periods (14.2%) (OR, 1.05; 95% CI, 0.97-1.12; P = 0.23). Additionally, there was no significant difference in operative mortality between the early (3.7%) and later periods (3.9%) (OR, 1.02; 95% CI, 0.89-1.17; P = 0.78). However, compared with the later part of the academic year, the early portion of the year was associated with longer cardiac ischemia times (84.4 ± 39.9 vs 83.3 ± 42.2 min), cardiopulmonary bypass times (125.7 ± 52.1 vs 124.5 ± 56.0 min), and total surgical times (295.2 ± 90.0 vs 288.0 ± 90.0 min) (P < 0.05 for all).

Conclusions: The early part of the academic year was associated with slightly longer operative times than the later part of the year; however, risk-adjusted outcomes were similar in both periods. This finding should lessen any concerns about the quality of cardiac surgical care at the beginning of the academic year.