In-hospital deaths declined over time at children's hospital without pediatric medical emergency team

May 2 2011

A study documents reduction in hospital mortality over ten years in a children's hospital without a Pediatric Emergency Medical Team (PMET), according to a report in the May issue of *Archives of Pediatrics & Adolescent Medicine*.

Hospital-based PMETs have been advocated as an approach to reduce rates of in-hospital cardiopulmonary arrest and mortality (death) among children. Several previous studies that have evaluated outcomes before and after implementation of PMETs have found inconsistent results, with some showing benefit and some showing no effect. However, according to Ari R. Joffe, M.D., from the University of Alberta and Stollery Children's Hospital, Edmonton, Canada, and colleagues: "We hypothesized that favorable results in PMET studies may be due to limitations of study design, including the use of historical controls, inadequate risk and temporal trend adjustment, and inadequate accounting for cointerventions that confound the comparisons."

Joffe and colleagues evaluated data from their hospital, which does not have a PMET. They reviewed pediatric discharges and inpatient deaths, the number of code calls, and the number of cardiopulmonary arrests that occurred on the pediatric wards and resulted in admission to the pediatric intensive care unit. Then they compared these data (from 1999 through 2009) during the same time periods used in several published studies of PMET effectiveness.

The authors found that hospital mortality rates decreased over time in their facility. When they compared their results from the same time periods of two PMET studies showing reduction in mortality, the authors also found a decrease in mortality at their hospital, whereas during the time periods of the PMET studies that showed no change in or did not examine hospital mortality, there was no significant change in mortality at their hospital. The authors also report that over the 10-year study period, there were no changes in ward code rates or cardiopulmonary arrest rates at their hospital.

The researchers suggest that other interventions not measured by the PMET studies may have confounded the results of those studies, and that hospitals such as theirs may already have systems and procedures that replicate the role of a PMET. "We claim that this finding demonstrates the limitation of before-and-after study designs (cohort studies with historical controls) in determining the effect of PMET implementation," they conclude, adding that larger and better-designed studies evaluating PMET are needed.

More information: Arch Pediatr Adolesc Med. 2011;165[5]:419-423.