

Do Rapid Response Teams Save Lives?

This strategy seems like a no-brainer—but a study suggests that clinicians take a second look.

Rapid response teams reduce preventable in-hospital deaths—some of the time. Research hasn't conclusively shown that they're effective in lowering cardiac arrest and mortality rates outside the ICU. Now a large prospective cohort study conducted by Chan and colleagues at a tertiary hospital in Kansas City, Missouri, has found that they don't improve rates of cardiac arrest or death hospital-wide—that is, both inside and outside the ICU.

A rapid response team consists of ICU personnel who can be summoned to assess and treat any patient outside the ICU who shows signs of deterioration and who may be at risk for cardiac arrest or death. Team makeup varies but often includes one or more ICU nurses, a respiratory therapist, and a physician who can be called upon when needed.

Since the Institute for Healthcare Improvement (IHI) made the implementation of rapid response teams one of the six strategies in its 100,000 Lives Campaign in 2004 (and carried over as one of 12 interventions in its more ambitious 5 Million Lives Campaign in 2006) to reduce preventable deaths in hospitals, initiatives promoting the use of such teams have been taken up by major foundations and accrediting agencies, as well as hundreds of hospitals.

But little is known about the cost-effectiveness of rapid response teams, and until now their effectiveness had only been studied outside the ICU—not in the hospital as a whole. Concerned that “a primary action of rapid response

teams is to transfer patients to the ICU,” and that cardiac arrests in the ICU were not included in recent studies, Chan and colleagues examined hospital-wide cardiac arrest and mortality rates before and after the implementation of a long-term (20-month) rapid response team.

The team in the study consisted of two ICU nurses, a respiratory therapist, and an ICU physician. During the 20 months of the study, the team was called on 376 times. Cardiac arrest rates were 11.2 per 1,000 admissions before implementation of the rapid response team and 7.5 afterward; after adjusting for variables, the reduction was not significant. Nor did unadjusted hospital-wide mortality rates “meaningfully change” after the intervention, with rates of 3.22 per 100 admissions before the intervention and 3.09 after the intervention.

Should support of rapid response teams be reevaluated? IHI vice president Joe McCannon says that although the organiza-

tion is “always interested in new evidence,” the IHI still believes that “rapid response teams and other early detection strategies are important” for addressing this problem.

The study authors suggest that secondary effects of having rapid response teams may be as important as the primary outcomes they measured. Noting that “a sizable number of patients who survived their initial rapid response team intervention subsequently obtained [do not resuscitate] status during their hospital stay,” the authors speculate that “rapid response teams may not be decreasing [cardiac arrest] rates as much as catalyzing a compassionate dialogue of end-of-life care among terminally ill patients.” The authors also call for more research into the best composition of rapid response teams, their most appropriate use in hospitals, and the “optimal triggers for rapid response team activation.”

—*Jacob Molyneux, senior editor*

Chan PS, et al. *JAMA* 2008;300(21):2506-13.

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👉 **Drug-resistant temporal lobe epilepsy patients may live longer after anterior temporal lobe resection than with medical management**, concluded a December 3, 2008, report in *JAMA*. A simulation model incorporating seizure status, surgical complications, and patients' quality-of-life data indicated that surgery would confer an average increase in lifespan of five years, or 7.5 quality-adjusted life-years, as compared with medical therapy. The model predicted that after one year, 71.9% of postsurgery patients would have no disabling seizures (compared with 8% of patients taking medication) and less than a 6% chance of relapse per year (compared with a 25.4% chance of relapse in patients taking medication). The American Academy of Neurology advises that not every nonresponder is a candidate for surgery; medical evaluation is necessary.

It's Not Easy Being Teen

Health care providers aren't trained to handle common adolescent issues such as depression and eating disorders.

For the 42 million adolescents living in the United States, health care is “highly fragmented” and “poorly coordinated,” according to a new report issued by the National Research Council (NRC) and the Institute of Medicine (IOM). “We’re missing opportunities to respond to critical issues of young people that may have a long-lasting impact on their health and well-being,” says Linda H. Bearinger, a professor at the University of Minnesota’s School of Nursing, director of the university’s Center for Adolescent Nursing, and the only nurse on the 20-member IOM committee. The report, *Adolescent Health Services: Missing Opportunities*, which focuses on the health care needs of people ages 10 to 19, highlights five areas in which improvements are necessary: primary care coordination; disease prevention, health promotion, and behavioral health; community involvement; protection of confi-

dentiality; and preparation of providers. It can be found at www.nap.edu/catalog.php?record_id=12063.

According to Bearinger, the majority of health care providers who work with adolescents believe they’re ill equipped to do so. As an example, the report cited one survey of 520 nurses who worked with adolescents, more than a quarter of whom identified substantial gaps in their knowledge of such common teen health issues as depression, eating disorders, and violence. In addition, says Bearinger, nearly two thirds felt inadequate to address the needs of gay, lesbian, and bisexual adolescents or to counsel teens on pregnancy options.

Part of the problem is regulatory. “With the exception of pediatric and family medicine,” she explains, “there’s currently no requirement that curriculum content or accreditation, licensure, or certification exams deal with adolescent health.” The NRC-IOM

report calls for regulatory bodies and agencies funding training programs to address such deficiencies.

Even with adequate preparation, however, providers are hard pressed to promote comprehensive adolescent care within a system that neither fosters nor funds coordination of primary and specialty care. The NRC and IOM recommend that providers and the federal, state, and private systems that support them develop interdisciplinary adolescent health care services. In such endeavors, Bearinger suggests, nurses may be particularly well suited to provide leadership. Nurses, she says, “move seamlessly between mental, physical, and psychosocial health and are prepared to create solutions for coordinating systems.”

Echoing many of the same concerns as the NRC-IOM report is the policy statement from the American Academy of Pediatrics (AAP) (<http://pediatrics.aappublications.org/cgi/content/full/123/1/191>), which addresses the deleterious effects of underinsurance on adolescent access to preventive, reproductive, and behavioral health care. The AAP identified the following problems: benefits are not well matched to adolescent needs; nearly 40% of adolescent health care expenditures are paid out of pocket; and within Medicaid risk-based managed care systems, capitation rates covering 13-to-18-year-olds are substantially lower than those covering younger and older patients, which effectively penalizes the physicians who see them. —*Maribeth Maher*

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⚡ **Nearly 50% of college-aged youths had a psychiatric disorder within the past year**, but fewer than 25% sought treatment for it. Such were the findings of an analysis of the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions published in the December 2008 issue of the *Archives of General Psychiatry*. Investigators analyzed the responses of 5,092 19-to-25-year-olds—more than half of whom had not attended college in the past year. Among college students, the most prevalent psychiatric disorders involved alcohol use disorders (20.4%), followed by personality disorders (17.7%). Among those who didn’t attend college, personality disorders were most prevalent (21.6%) followed by nicotine dependence (20.7%). The prevalence of mood and anxiety disorders was also high in both groups. In light of the high prevalence of psychiatric disorders and the low percentage of youths seeking treatment, greater efforts to develop intervention programs are needed.

Cesarean Section Boosts Asthma Risk

Delayed exposure to bacteria may be involved.

Researchers in the Netherlands report that children born by cesarean section are nearly twice as likely to be diagnosed with asthma by age eight as children born vaginally. The link between cesarean sections and asthma was strongest in children who had two parents with allergies.

Researchers followed 2,917 children born between May 1996 and December 1997, of whom 247 (8.5%) were born by cesarean section. Asthma symptoms, an asthma diagnosis made by a physician, and any treatments were reported yearly by parents. By age eight, 12% of children had asthma, and the rate was highest (22%) in children with two allergic parents. Among children born by cesarean section, those with one allergic parent were twice as likely, and with two allergic parents three times as likely, to have asthma as children

born vaginally. The results suggest “a strong interaction between genetic factors and the mode of delivery on the development of asthma,” write the authors.

Just how cesarean section influences the risk of asthma is unclear, but early exposure to microbes may be involved. Children born by cesarean section aren't exposed to the mother's vaginal and intestinal microbes, first author and pediatrician Caroline Roduit told *AJN*. Early exposure to bacteria and viruses primes the immune system to produce antibodies that fight infections, whereas delayed exposure encourages the development of immune cells that set off allergic reactions. This “hygiene hypothesis” helps to explain the rise in asthma, eczema, and other allergic diseases in developed countries.

Cesarean sections are often performed for nonmedical rea-



sons, and rates have risen dramatically in developed countries in the past few decades, as have the prevalences of asthma and allergies. A pregnant woman contemplating a cesarean section for convenience “should be informed of the risk of asthma for her child, especially when the parents have a history of allergy or asthma,” the authors write.

—Carol Potera

Roduit C, et al. *Thorax* 2009;64(2):107-13.

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🔗 **Survey: nursing issues are central to health care reform.** The Center to Champion Nursing in America reports results of a national survey showing that many Americans view nurses and the nursing shortage as key issues in health care reform. In telephone interviews conducted after the presidential election last November with a random sample of 1,003 adults, 87% said it was important for Congress and the president to address the shortage of nurses and nursing faculty when they tackle health care reform; 88% said “that making sure there are enough nurses” should be a focus of quality-improvement efforts; and 87% said that “nurses can play an important role in reducing health care costs.” The center, funded by AARP, the AARP Foundation, and the Robert Wood Johnson Foundation, says that it's “in a strong position to make its case to Congress and the administration during

the health reform debate.” For more information, go to <http://championnursing.org>.

🔗 **Two or more alcoholic drinks a day may increase a woman's risk of atrial fibrillation,** reported a study in the December 3, 2008, issue of *JAMA*. Previous studies showed a high risk of atrial fibrillation among men who were moderate-to-heavy drinkers but not among women. A total of 34,715 women older than age 45 were followed for a median of 12.4 years. Women who consumed two or more drinks each day made up only 3.9% of the group but accounted for about 6.1% of atrial fibrillation. These women had 2.25 atrial fibrillation-related incidents per 1,000 person-years, compared with 1.59 incidents per 1,000 person-years among nondrinkers, or a 1.6-fold greater risk of atrial fibrillation. Researchers found no correlation between atrial fibrillation and consumption of less than two drinks daily.

Group Therapy Benefits Patients with Breast Cancer

A focus on relaxation and exercise improves results.

Women with breast cancer who participated in group therapy for 11 years were 56% less likely to die of the disease and 45% less likely to have their cancer return, according to a recent study.

Researchers followed 227 women surgically treated for breast cancer, half of whom participated for one year in therapy groups; the other half received only assessments. Therapy included muscle relaxation, problem solving, strategies for increasing exercise and lowering fat intake, learning to communicate assertively, and coping with adverse effects of treatment. The goals of therapy were to improve the quality of patients' lives and health behaviors (diet, exercise, and smoking cessation), reduce stress, and facilitate treatment and follow-up.

Researchers found that cancer recurred in 29 women in the therapy group and in 33 women in the assessment-only group. The median time to disease recurrence in the therapy group was 2.8 years; in the control group it was 2.2 years. Of those in the therapy group, 24 died of the disease (the median survival time being 6.1 years) and of those in the assessment-only group, 30 died (the median survival time being 4.8 years). Multivariate analyses showed that the patients in the therapy group had a 50% lower risk of breast cancer recurrence and a 68% lower risk of death from breast cancer than patients in the assessment-only group.

These findings confirm the earlier work of David Spiegel of Stanford University, who found that cancer patients' participation in support groups increased the

length and quality of their lives. According to Pamela J. Haylock, interim executive director of the Association for Vascular Access and a cancer care consultant, few have been able to duplicate his results. "Finally we're seeing similar findings," says Haylock, who has hosted retreats for breast cancer patients. "Women with breast cancer tell us they like finding people who are going through or have gone through a similar experience."

Researchers have warned of the relationship between stress and health for some time; in this study, women who focused on stress reduction and took part in daily muscle relaxation exercises had even better results than others in the therapy groups.

—Tammy Worth

Andersen BL, et al. *Cancer* 2008;113(12):3450-8.

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↳ **Generic cardiovascular drugs and their brand-name equivalents produce similar results**, reported a systematic review and metaanalysis of 47 studies in the December 3, 2008, issue of *JAMA*. The review analyzed trials published from 1984 (when the Food and Drug Administration first approved generics) to 2008. Analyses indicated that brand-name drugs weren't superior to their generic equivalents in 10 of 11 diuretic trials, seven out of seven β -blocker trials, five of seven calcium channel blocker trials, five of five warfarin trials, and two of two statin trials, among others. Meanwhile, more than half (23 of 43) of editorials written during the same period advised against using generic drugs.

↳ **Weight training is better than aerobic exercise for chronic lower back pain**, according to a report in the March issue of the *Journal of Strength and Conditioning Research*. In addition to gaining strength and flexibility, subjects with chronic lower back pain who used free weights

and weight-bearing exercise equipment showed a 60% improvement in pain, disability, and quality of life. But their counterparts who worked out on treadmills or elliptical trainers showed no significant improvements. Both groups exercised three times weekly for 16 weeks.

↳ **Unlicensed persons cannot give insulin to school children in California**, ruled a state court in November 2008. This ruling upheld California's Nursing Practice Act, which prohibits people other than nurses from administering insulin. Although the case focused on delegation of insulin, it's really about who has control over nursing practice in public health arenas, according to Amy Garcia, executive director of the National Association of School Nurses. "The question is whether a school district can override the Nursing Practice Act because of convenience or cost," she said. "This ruling upholds the tradition that the Nursing Practice Act guides nursing practice." ▼