

# Researcher predicts spike in computer-related injuries in medical workers

November 29 2012, by Ted Boscia

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(Medical Xpress)—As U.S. health care goes high tech, spurred by \$20 billion in federal stimulus incentives, the widespread adoption of electronic medical records and related digital technologies is predicted to reduce errors, save time and lower costs. But it is also likely to significantly boost musculoskeletal injuries among doctors and nurses, concludes a Cornell ergonomics professor in two new papers.

The repetitive strain injuries, he said, will stem from poor office layouts and improper use of computer devices.

"Many hospitals are investing heavily in new technology with almost no consideration for principles of [ergonomics](#) design for computer workplaces," said Alan Hedge, professor of human factors and ergonomics in the College of [Human Ecology](#)'s Department of Design and Environmental Analysis. "We saw a similar pattern starting in the 1980s when commercial workplaces computerized, and there was an explosion of [musculoskeletal injuries](#) for more than a decade afterward."

Hedge conducted surveys with co-author Tamara James, an ergonomist at Duke University Medical Center, of [medical professionals](#) at clinics associated with Duke.

For a paper published in the *Proceedings of the Human Factors and Ergonomics Society* 56th Annual Meeting, held Oct. 22-26 in Boston, Hedge and James asked 179 physicians (93 men, 86 women) about the frequency and severity of their musculoskeletal discomfort, computer

use in their clinic, knowledge of ergonomics and typing skills. The most commonly reported repetitive strain injuries were neck, shoulder and upper and [lower back pain](#)—with a majority of female [doctors](#) and more than 40 percent of [male doctors](#) reporting such ailments on at least a weekly basis. About 40 percent of women and 30 percent of men reported right wrist injuries at a similar frequency.

"These rates are alarming. When more than 40 percent of employees are complaining about regular problems, that's a sign something needs to be done to address it," said Hedge. "In a lot of hospitals and medical offices, workplace safety focuses on preventing slips, trips and falls and on patient handling, but the effects of computer use on the human body are neglected."

The gender differences, the authors write, appear to be in part because women reported spending about an hour longer on the computer per day than men.

Hedge added that poor ergonomics among doctors and nurses could affect their patients as well: Repetitive strain injuries could keep highly skilled medical professionals out of work, prompt errors brought on by unnecessary strain and fatigue, and result in fewer face-to-face interactions with doctors.

In a second study of 180 physicians and 63 [nurse practitioners](#) and physician assistants in the same health system, published in a new volume, "Advances in Human Aspects of Healthcare" (CRC Press), more than 90 percent of respondents reported using a desktop computer at work. On average, they spent more than five hours per day using computers.

Fifty-six percent of doctors and 71 percent of nurse practitioners and physician assistants said their computer use at work had increased in the

past year; 22 percent of doctors and 19 percent of nurse practitioners and physician assistants reported less time in face-to-face interactions with patients. Only about 5 percent of participants reported an "expert knowledge" of ergonomics, and more than two-thirds said they had no input in the planning or design of their computer or clinical workstation.

"We can't assume that just because people are doctors or work in health care that they know about ergonomics," Hedge said. "With so many potential negative effects for doctors and patients, it is critical that the implementation of new technology is considered from a design and ergonomics perspective."

Provided by Cornell University

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