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'Attention on the flight deck': What doctors can learn from pilots about communication

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As computers become common in medical examination rooms across the United States, a new study explores the role this technology plays in the doctor-patient relationship. The researchers looked to aviation, with its long history of success in complex communication between humans and machines, as an exemplar that may provide useful strategies to improve communication in the exam room.

With the introduction of a "third party" into the exam room—the computer that powers electronic medical records—communication between physician and patient has become more complex. If not well-integrated into the visit, it may have the unintended consequence of diminished attention to the patient.

How should a physician prepare for an optimal appointment, and how should he or she spend the limited number of minutes allotted to interact with the patient? Where should the computer be placed within the exam room? Should the patient be invited to view the computer screen? How should information and questions, whether grave or routine, be communicated between the two humans now that a non-human is part of the process?

As with the cockpit and control tower exchange, interactions in the doctor's office require communication of critical highly complex information in a short, stressful time period. In both aviation and medicine, effective communication is essential to safety and desired outcome.

"When the air traffic controller gives an instruction to a pilot, the pilot's response must be phrased to indicate understanding of the air traffic controller's message," said Regenstrief Institute investigator Richard M. Frankel, Ph.D., Associate Director of the Veterans Affairs Center for Healthcare Information and Communication at the Richard L. Roudebush VA Medical Center, and a professor of medicine at Indiana University School of Medicine, who led the new study. "The same is true if the crew makes a request of the control tower. Both the pilot and the co-pilot—the two people on the flight deck—must have the same understanding of all communication, and this is largely engineered into the instrumentation and ergonomics of the cockpit.

"But we don't have that in medicine. Computers can be placed anywhere that it is convenient to drop the connecting wires irrespective of whether this means the doctor's back is to the patient while he or she types. Likewise, doctors speak to patients but do not generally test for comprehension by asking them to repeat what was said, a feedback loop that is required in aviation.

"Would it be better if, as the physician enters an order into the electronic medical record, he or she says it out loud or shows it to the patient on an easy-to-read computer screen so that both people in the room have the same understanding and opportunity for correcting errors and misunderstanding? The best interventions are those that make it easy for the doctor and patient to do the right thing. Unfortunately, technology in the exam room is not always configured in a way that optimizes interaction."

"'Attention on the flight deck': What ambulatory care providers can learn from pilots about complex coordinated actions" appears in the December 2013 issue of *Patient Education and Counseling*, the journal of the American Academy on Communication in Healthcare and of the European Association for Communication in Healthcare. Former

Regenstrief Institute investigator Jason Saleem, Ph.D., of the Roudebush VA Medical Center Office of Informatics and Analytics, is the co-author of the study, which was funded by the Department of Veterans Affairs. Dr. Saleem is a human factors engineer.

"There is a great deal of room for improving the balance of interpersonal and technical attention that occurs in routine outpatient visits in which computers are present in the exam room," Drs. Frankel and Saleem concluded. "Using well-known aviation practices can help primary-care providers become more aware of the opportunities and challenges for enhancing the physician-patient relationship in an era of exam room computing."

Dr. Frankel has conducted a large number of studies on opportunities and challenges for enhancing the doctor-patient relationship. He also evaluates both physician and patient satisfaction and means to improve both, including through the training of medical students and experienced physicians.

In this new study, the time physicians spent with the computer ranged from 20 percent of the visit to a surprisingly lengthy 80 percent.

"Patients express low satisfaction with physicians who spend more time with the computer than with them," Dr. Frankel said. "And many doctors don't realize how much time they are actually interacting with the computer rather than the patient. We need to train physicians to do a better job of balancing the relationship between the computer and the patient in the exam room process.

"Computers are complex to use and take a lot of the time allotted for patient care. Design and usability of computer systems are critical factors. And we should explore whether national guidelines developed by human factors engineers and physicians working together would be

helpful."

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