# Computer system more effective than doctors at producing comprehensive patient reports

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A computer system was more effective than doctors at collecting information about patient symptoms, producing reports that were more complete, organized and useful than narratives generated by physicians during office visits, according to a Cedars-Sinai study.

Investigators said the research, published in the *American Journal of Gastroenterology*, highlights the potential of computers to enhance the quality of medical care and improve outcomes by harnessing accurate and thorough patient information.

The authors said they did not expect technology to replace physicians in the exam room. Instead, they said that computers can empower doctors to practice medicine more efficiently and effectively as they face growing requirements to document symptoms, diagnoses and other patient data.

"Our results suggest that computers can help clinicians focus on what they do best - practicing the distinctly human art of medicine," said Brennan Spiegel, MD, a study author and director of Health Services Research. "This study offers initial proof that a computer can create meaningful and relevant patient histories that are useful in the clinical setting."

The researchers conducted their study in outpatient gastrointestinal clinics in Los Angeles, identifying 75 patients who reported a variety of active symptoms, including abdominal pain, heartburn, reflux, nausea,

vomiting, constipation and diarrhea.

Patients were seen initially by doctors, who typed or dictated information about illness histories into the electronic health record system. The patients later answered questions about their conditions on a website called My GI Health. An algorithm on the website collected the answers and translated them into patient narratives.

The reports generated by the doctors and the computer system were evaluated by a separate group of physicians who had no knowledge of the study, including the fact that half of the patient histories were written by a computer. The reviewers were told only that they were auditing the quality of reports in gastrointestinal clinics.

The reviewers concluded that the computer-generated summaries were superior, describing them as better organized, more complete, succinct, comprehensive and useful.

"The computer-generated narratives were of higher quality overall," said Christopher V. Almario, MD, a Cedars-Sinai-based gastroenterology fellow and a lead author of the study.

The researchers said that computers offer a solution to the problem of doctors entering incomplete or inaccurate information into patients' records. The technology also frees physicians to focus more on patients during office visits and to catch important bits of information and nonverbal cues that might otherwise be missed.

The investigators suggested that patients are comfortable disclosing health information in "virtual human" interviews through the web-based questionnaire.

"The study reveals that computers can lift at least some of the burden

from doctors by collecting and analyzing data," Spiegel said.

Provided by Cedars-Sinai Medical Center