

# Cancer patient symptom surveys linked to reduced ER visits, improved survival and quality of life

December 9 2015, by Laura Oleniacz

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Systematic collection of cancer patients' symptoms using computer surveys was linked to less frequent emergency room admissions, longer average chemotherapy adherence, greater quality of life improvements, and improved survival, according to a new randomized, controlled trial spearheaded by a UNC Lineberger Comprehensive Cancer Center researcher.

The first-in-kind study, led by Ethan Basch, MD, MSc, a UNC Lineberger member, director of the UNC Lineberger Cancer Outcomes Research Program and an associate professor in the UNC School of Medicine Division of Hematology and Oncology, published today in the *Journal of Clinical Oncology*, compared outcomes for cancer patients at the Memorial Sloan Kettering Cancer Center (MSKCC) in New York who reported their symptoms using a web-based survey system with outcomes for patients who relied on usual care for symptom detection. The study evaluated outcomes for 766 patients at MSKCC with metastatic cancers who were receiving outpatient chemotherapy. Basch led the study at MSKCC before his move to UNC in 2012.

For patients using the web system, automatic email alerts were sent to nurses and doctors for severe or worsening symptoms. Prior research has shown that doctors miss up to half of patients' symptoms during cancer treatment. Researchers say survey systems like this one can effectively inform clinicians about issues of concern.

"If we had developed a new drug that yielded these kinds of benefits, we would be very excited," Basch said. "This randomized trial found that integrating systematic collection of patient symptoms via the web into cancer treatment improves multiple key clinical outcomes."

A larger number of patients using the survey system experienced quality of life improvements, with improvements in 34 percent of patients compared to 18 percent of patients receiving usual care. The survey group also had fewer [emergency room](#) visits, with 34 percent visiting the ER compared to 41 percent receiving usual care. They remained on chemotherapy longer at an average of 8.2 months compared 6.3 months. They also saw survival benefits: 75 percent of patients using the surveys were alive after one year, compared to 69 percent of those receiving usual care.

"While this study wasn't designed to evaluate the mechanism of why we saw these improvements, we can hypothesize that by flagging symptoms that clinicians would otherwise miss, we enable earlier symptom management that avoids downstream events like pain crisis, dehydration, or intractable nausea," said Basch, who also has an appointment in the UNC Gillings School of Global Public Health Policy and Management. "I would suspect that the main mechanism of action is improved awareness by clinicians of patient symptoms, which enables earlier interventions to avert downstream, untoward events."

Basch noted the computer survey system improved symptom management activities. The study found that nurses directly acted upon the system results more than three-quarters of the time, with changes in medication resulting from 12 percent of email alerts, and referrals to the emergency room occurring due to 8 percent of alerts.

"Direct patient reporting gives patients a voice – their unfiltered experience is captured and conveyed to their [health care providers](#), and

their perspective is not being modified by a clinician or anybody else," Basch said.

While the study was conducted at Memorial Sloan Kettering, UNC Lineberger's Allison Deal, MS, a biostatistician, and Antonia Bennett, PhD, a UNC Lineberger member and research assistant professor in the UNC Gillings School of Global Public Health, were co-authors on the paper. Also, UNC Lineberger researchers are launching a separate clinical study to see if daily use of an electronic symptom reporting system can reduce adult patients' symptoms while they're receiving high doses of chemotherapy as part of bone marrow transplantation. The ongoing trial at the N.C. Cancer Hospital uses similar software, and is led by William Wood, MD, a UNC Lineberger member and assistant professor in the UNC School of Medicine Division of Hematology/Oncology.

"We hope to extend the findings from Dr. Basch and colleagues to the inpatient setting at the N.C. Cancer Hospital for [patients](#) who are critically ill, and experiencing high amounts of symptomatic toxicity," Wood said. "We believe that a standardized and comprehensive view of the breadth and depth of patient-reported symptoms will enable health care providers to make rational, informed decisions that will improve the patient experience and positively affect long-term outcomes."

**More information:** E. Basch et al. Symptom Monitoring With Patient-Reported Outcomes During Routine Cancer Treatment: A Randomized Controlled Trial, *Journal of Clinical Oncology* (2015). [DOI: 10.1200/JCO.2015.63.0830](https://doi.org/10.1200/JCO.2015.63.0830)

Provided by University of North Carolina at Chapel Hill School of Medicine

Citation: Cancer patient symptom surveys linked to reduced ER visits, improved survival and quality of life (2015, December 9) retrieved 24 April 2024 from <https://medicalxpress.com/news/2015-12-cancer-patient-symptom-surveys-linked.html>

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