

Cancer patients, clinicians find value in electronic real-time symptom reporting system

October 30 2020



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Both cancer patients and their medical teams found it beneficial when patients shared their symptoms in real time using a web- or telephone-

based reporting system, according to a national multi-institutional study.

Ethan Basch, MD, MSc, at the University of North Carolina Lineberger Comprehensive Cancer Center, and his colleagues reported in the journal JCO Clinical Cancer Informatics findings from the PRO-TECT trial, which is evaluating the use of electronic patient-reported outcomes (ePROs) among adults receiving outpatient treatment for advanced and metastatic cancers.

"Our prior research showed that using a web-based system for patients to self-report symptoms to their cancer care team improves [patient satisfaction](#), [quality of life](#), physical function, reduces [emergency room visits](#) and lengthens survival," said Basch, director of UNC Lineberger's Cancer Outcomes Research Program and the Richard M. Goldberg Distinguished Professor and chief of oncology at the UNC School of Medicine. "However, it has not been clear whether this approach could be widely used in cancer practices across the U.S. or be seen as useful or valuable by patients and providers. It is essential with any strategy for improving care to make sure that people will actually use it and find it valuable."

In the new study, the researchers conducted a cluster-randomized controlled study at 52 community-based oncology practices across the United States. Half of the practices were assigned to use ePROs as part of the standard of care.

Participants in the study's intervention arm were prompted every week for a year to report their symptoms and well-being. This involved using a website or an automated telephone program to answer a series of questions about their symptoms, such as pain, nausea and depression, as well as their physical functioning and financial health. The responses had a pre-assigned value on a five-point scale. When a patient reported worsening or severe symptoms, they were sent an email with information

on [symptom](#) management and a nurse was alerted in real-time to intervene.

To measure whether the ePRO process and information gathered provided value, as well as to identify challenges, the researchers surveyed the patients and clinicians. Patients provided feedback three months after they started on the study and when they completed it. Nurses and physicians shared their assessment on clinical usefulness after they had worked with the system for six months or more.

The majority of the 496 patients surveyed found the PRO-TECT digital ePRO system was easy to understand (95%) and use (93%), and the questions were relevant to their care (91%). Most of the 57 nurses responded that the information was helpful for clinical documentation (79%) and useful for patient care (75%). Of the 39 oncologists surveyed, most found ePRO information useful (91%).

Though clinicians said the ePRO system was useful overall, some reported the information collected had limited value. Sixteen percent of the nurses surveyed said it rarely or never improved discussions with patients, and 14% said it didn't improve care quality. Nearly 30% of physicians said they rarely used patient-reported information to shape their discussions with patients. Also, some nurses felt they received too many symptom alerts, yet 93% wanted to receive future alerts for severe symptoms.

"There is clearly a lot of enthusiasm from patients to connect to their care team through electronic real-time approaches, and providers also recognize this value, but we know it isn't perfect," Basch said. "Our findings lay a path forward for determining the best ways to integrate patient-reported outcomes in oncology practice."

Basch said a number of issues need to be addressed to encourage clinics

and hospitals to consider using ePRO systems. The technology must be easy for patients and providers to use. Workflows may need to be modified to give nurses more time to respond to symptom alerts. Basch said it would be helpful to develop standardized ways to teach patients how to use the system and to remind them of the importance of using it. In addition, it is important to continuously monitor and troubleshoot a program while it is being implemented.

"Patient reported outcomes are well accepted and seen as valuable for quality care by patients and providers, and they improve patient engagement and experience," Basch said. "Models for health systems to successfully implement PRO programs are needed, likely based on quality improvement approaches. For wide implementation to be effective, a financial model will also be helpful for PROs, most likely through direct reimbursement from insurance companies, or as a key component of value-based alternative payment arrangements between health systems and insurance payers."

More information: Ethan Basch et al, Clinical Utility and User Perceptions of a Digital System for Electronic Patient-Reported Symptom Monitoring During Routine Cancer Care: Findings From the PRO-TECT Trial, *JCO Clinical Cancer Informatics* (2020). [DOI: 10.1200/CCI.20.00081](https://doi.org/10.1200/CCI.20.00081)

Provided by UNC Lineberger Comprehensive Cancer Center

Citation: Cancer patients, clinicians find value in electronic real-time symptom reporting system (2020, October 30) retrieved 1 January 2023 from <https://medicalxpress.com/news/2020-10-cancer-patients-clinicians-electronic-real-time.html>

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