

# Mobile app aims to help identify graft-versus-host disease earlier

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Stem cell transplants can help ensure remission for some cancer patients. However, approximately 40% to 50% of cancer patients who have a type of stem cell transplant where cells are donated by another person experience a side effect known as chronic graft-versus-host disease (cGVHD). This occurs when the donor stem cells "attack" the patient's healthy cells.

Treatment for cGVHD works best when the condition is caught as early as possible, but sometimes weeks or months can pass between a patient's follow-up visits and symptoms can develop in the meantime.

A team of nurse-researchers at Wilmot Cancer Institute came together with Wave Health, a company that develops symptom-tracking apps, to develop an app specifically for chronic graft-versus-host-disease symptoms.

To investigate feasibility, they conducted a study that enrolled 15 patients who used the app over a month. Early results show that about 88% of patients were able to use the app once a week, far surpassing the 50% benchmark the team had hoped for. In addition, about 89% of participants said the app was easy to use, helpful, and relevant, again passing the 50% benchmark.

"GVHD symptom onset is often difficult to know, subtle symptoms can be missed, and determining treatment response is challenging," says Jamie Oliva, ANP-BC, FNAP, BMTCN, associate professor of Clinical Nursing at the University of Rochester and nurse scientist at Wilmot.

"These study findings showcase the opportunity to improve treatment response and guide crucial next steps in thinking about intervention opportunities."

KC Clevenger, Ph.D., RN, FNP-BC, chief nursing officer at Wilmot, presented pilot data at the 49th Annual Oncology Nursing Society Congress ([ONS Congress 2024](#)), held in April in Washington, D.C. The study remains ongoing and the ultimate goal is that the initial data collected will help make possible further research through a multi-center study.

The ultimate end goal is a tool that could become used regularly in the clinic.

"When we are engaging with patients and trying to monitor their symptoms after a stem cell transplant, it is very important to know what is going on with them between clinic visits, and to educate them," says Clevenger.

"This study offers introductory objective data to help us start looking at the best ways of assessing a patient's symptoms, as well as when they started and how severe they are. We look forward to continuing this work in hopes of finding solutions that improve quality of life for our patients and lead to better workflows for our oncology care teams."

## **About chronic graft-versus-host disease (cGVHD)**

- There are two types of graft-versus-host disease: chronic GVHD develops within one year of a transplant whereas acute GVHD develops in the early weeks of a transplant.
- The two types have different symptoms. Symptoms of cGVHD can include (but are not limited to): Rash, nail changes, itchy skin, muscle pain, [dry eyes](#), blurred vision, teary eyes, mouth sores, chapped lips, shortness of breath, cough, nausea, vomiting, diarrhea, painful intercourse.
- Those at higher risk of cGVHD include those with a mismatched donor or unrelated donor, [older patients](#), a female donor for a

male recipient (and risk increases if female donor has ever been pregnant), having had acute GVHD.

Provided by University of Rochester Medical Center

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