



Sarah Mougalian, MD

## Texting to Check in on Patients

**Sarah Mougalian, MD, Assistant Professor of Medicine**, specializes in treating patients with breast cancer. She found herself frustrated by one aspect of their care. Most breast cancers – about 75 percent – are fueled by the hormone’s estrogen and/or progesterone. After patients with this type of breast cancer finish their primary treatments, typically surgery and perhaps followed by radiation and/or chemotherapy, they are prescribed a medication to regulate their hormones, with the goal of preventing a recurrence of cancer. The regimen sounds simple – one pill every day for five to ten years.

Yet many of these patients do not follow this regimen. At Smilow Cancer Hospital, said Dr. Mougalian, it’s about 25 percent, and some studies have found non-adherence rates up to 50 percent. The reasons range from forgetfulness to unfilled prescriptions to intolerance of the medication’s side effects. Failure to take the medication or to complete the long-term therapy may put these patients at higher risk of recurrence. Hence Dr. Mougalian’s frustration, which has led to an innovative solution.

Many of Dr. Mougalian’s patients are young women, and she noticed that when she entered an examining room, they often were texting on their smart phones. “So we thought about creating a text messaging system to help

people remember to take their medication and to identify any problems early,” explained Dr. Mougalian. “It can be three to six months between appointments, a long time to wait if you have questions. In some cases, people stop taking their medication and we don’t even know it.”

Dr. Mougalian collaborated with the technology company CircleLink Health to design a new idea in cancer treatment – a pilot study built around automated text messages. She enrolled 100 patients for three months. All of them received a daily text asking if they had taken their medication. They type “Y” for yes or “N” for no. Anyone who didn’t reply or who texted N for three straight days or six times within 30 days received a phone call from a triage nurse to find out what was going on. “This is an effort to identify people who are at risk of discontinuing their medication, and to try to address it in real time,” said Dr. Mougalian.

Every patient also got a weekly text asking whether they were experiencing any of the listed side effects, and if so, to rate them on a scale of severity from one to nine. Anyone who reported severe side effects received a phone call to discuss behavioral modifications or were offered a sooner appointment with their physician. Patients could also free-text non-listed side effects.

Finally, patients got one text per month asking if

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anything was preventing them from continuing their medication, such as side effects or finances.

Dr. Mougalian wanted to know whether patients would be irritated by the daily texts, or if they would develop “alert fatigue” and delete the reminder without replying. Only one patient complained. “Lots of patients say they like it, because they feel like somebody is looking out for them,” said Dr. Mougalian, “and it’s also an accountability tool, because they know someone is checking up on them.”

The text system also seemed to improve adherence: only five of the 100 patients stopped taking their medication (four due to side effects), a much higher rate of adherence than is typical. Dr. Mougalian cautions that this finding is preliminary. She hopes to test it in a long-term randomized study and has applied for funding to do a five-year investigation with 400 patients, half of them using the text system and the other half not, as a control group.

“The ultimate goal,” she said, “is to see whether better adherence correlates to better survival in the long run.”