Use Case Study: Reducing Patient No-Shows

Geisinger Health System
Central and Northeastern Pennsylvania

February 2014
Geisinger is a leading integrated health services organization widely recognized for its innovative use of the electronic health record, and for the development and implementation of innovative care models. Founded in 1915, the system serves more than 2.6 million residents throughout 44 counties in central and northeastern Pennsylvania.

Executive Summary
HIMSS mHealth Community, powered by mHIMSS, provides stories of mValue, successes and lessons learned from implementation and use of mHealth. The mValue Case Study Submission program has crosswalked the HIMSS Health IT Value Suite program, a comprehensive knowledge repository that classifies, quantifies and articulates the clinical, financial and business impact of health IT investments with the mHIMSS Roadmap, a strategic framework for providers to implement mobile and wireless technologies. The Roadmap highlights six key areas of focus; Technology, New Care Models, Standards, Policy, Privacy/Security, and ROI/Payment. The intent is to leverage these examples to assist in supporting decision-making and deployment for any hospital, Health System or Provider group looking to deploy mobile and wireless technologies.

mHealth Technology
Mobile Appointment Reminders

Goals Achieved
1. Decreased appointment no-shows
2. Decreased lost revenue due to no-shows

Health IT Value:
Savings
1. Significantly fewer no-shows in group of text program participants compared to non-participants.
Case Study Snapshot

Patients missing appointments represents significant cost to providers, as well as reduces patient satisfaction and impacts quality of care. To cost effectively reduce appointment no-shows, many providers had turned to automated telephone voice appointment reminders. Now, with mobile phones and texting largely ubiquitous, providers are implementing automated mobile phone text message appointment reminders. As part of its patient engagement initiative, Geisinger Health System implemented a platform to do text messaging and selected appointment reminders for its first pilot program. The automated text message reminders resulted in significantly fewer no-shows for the pilot group compared to a randomly selected group of patients that had not received text reminders. As a result of the pilot’s success, Geisinger rolled out the text message appointment reminder service system wide in late 2013.

mHealth Purpose

What events or observations triggered the decision to make changes at your organization? Describe the issue or workflow you set out to improve with a mHealth solution.

“Patient engagement using technology is a key initiative. We look at consumer trends to figure out how to get patients to better manage their health because the easiest way is to get them to use tools they’re used to and use today.”

---Chanin Wendling, director of E-Health, Geisinger Health System

Geisinger combined its observation of a key consumer trend, the directive to improve patient engagement, and the organization’s need to significantly reduce costly patient appointment no-shows. Chanin Wendling is director of E-Health at Geisinger. Her mission includes improving patient engagement using technology. She looks at consumer trends and figures out how to get patients to better manage their health. “Patient engagement using technology is a key initiative,” she said. “We look at consumer trends to figure out how to get patients to better manage their health because the easiest way is to get them to use tools they’re already using today.”

Wendling’s team looked at consumer mobile phone trends including text message usage in comparison to voicemail and email. “When my steering committee and I see a trend that looks worthwhile, we create a few pilots to prove whether Geisinger should fully invest in that particular technology,” Wendling added.

To select the first pilot program, Wendling and her team identified key organizational clinical and business priorities. They then narrowed it down to an initiative that was relatively simple, that would be a good match for text messaging and that could easily be measured. They chose to pilot automated patient appointment reminders. According to Wendling, the pilot would address Geisinger’s initiative to reduce patient no-shows, which cost the organization $176 per visit and is a multi-million dollar expense annually.
Leadership/Governance

Describe leadership/governance of your implementation (champions, supporters, management):

After Wendling and her administrative steering committee selected the pilot, they searched for a group at Geisinger that was interested in trying something new to solve a problem and was willing to be a pilot partner. They selected the Geisinger Medical Center Pediatric Department, which had a good relationship with the eHealth department. The pediatric department also had a business need, with no-show rates in the double digits.

Milestones & Metrics

What was your implementation plan and how was the outcome measured?

The eHealth department managed all requirements, design and workflow. The IT department handled the technical build components. Geisinger selected Twilio as the vendor for the text messaging platform but designed the text message workflow in-house. Workflow design included creating messages, determining which messages would be texted to which patients, when messages would be sent, etc. The team then generated a file from the medical record to Geisinger’s campaign manager/workflow automation tool.

Geisinger began with a three-month trial to determine if the technology worked. The initial pilot used employees who were also patients. The eHealth department sent a participation request message to a randomly selected group of 300 employee patients, resulting in 101 participants. The IT team matched the file of who had an appointment to a text message to send a reminder to that employee patient.

Once the team deemed the technology worked, they began enrolling Geisinger Medical Center pediatric patients in September 2012. While Geisinger has over 500,000 active patients, they piloted with a smaller sample size at the main pediatrics clinic and later expanded. When patients visited the clinic, their parents were invited to enroll in the text message appointment reminder program. Patient parents had to ‘opt in’ to participate, with verbal consent recorded in the patients’ medical records. By early spring 2013, Geisinger enrolled approximately 5,000 patients in the pilot program, with their parents signed up to receive texts.

Approximately half, or 2,500 participants, had at least one appointment during the pilot time frame and received appointment reminder text messages. The other 2,500 participants did not receive reminders during the specific pilot time frame, but received reminders going forward. Reminders were texted the day before the appointment, including appointment time and location. The text included an option for patients to text back a help message or stop request.

“This is Geisinger reminding Susan of your appointment tomorrow @ 12:30pm @ Grays Woods. Text HELP 4help”.

The pilot ran for six months. Then the team measured the outcome by tracking and comparing no-show rates for patients who participated in the program against those that did not.
Barriers & Solutions

Did you encounter any barriers during the implementation of the mHealth solution? Any adoption issues among your patients or staff? How did you overcome or respond to the barriers?

According to Wendling, the Geisinger team didn’t encounter any adoption issues or barriers. She noted that in order to prevent implementation barriers, the eHealth team worked diligently to ensure they figured out the information and workflow before rolling out the program.

Financial Considerations

How was your mHealth project funded?

The pilot program was funded by the eHealth department. The program cost less than $15,000, including all in-house IT time and text message platform vendor cost. Each text message cost only a penny and there was little IT maintenance.

According to Wendling, the post-pilot cost for the system is estimated to be approximately $25,000 - $30,000 annually. With the technology proven, Wendling is now working with other administrative and clinical leadership to determine whether the text message program will be funded centrally or through service lines.

Has your organization seen any documented ROI or savings from the implemented mHealth solution?

The results proved the pilot to be an overwhelming success. Geisinger compared the no-show rate of the pilot participants to a randomly selected group of patients that did not participate in the pilot program and had appointments during the pilot time frame. There were approximately 300 no-shows, a 12% no-show rate, in the group that received no reminders. In comparison, there were only 14 no-shows, a 0.56% no-show rate, in the text message group. (Note: This was not a formal research study with a control group.)

<table>
<thead>
<tr>
<th>Patients</th>
<th>Text Appointment Reminders</th>
<th># No Shows</th>
<th>% No Shows</th>
<th>Cost of No Shows</th>
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<tbody>
<tr>
<td>2500</td>
<td>Yes</td>
<td>14</td>
<td>0.56%</td>
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<tr>
<td>2500</td>
<td>No</td>
<td>302</td>
<td>12.08%</td>
<td>$53,152</td>
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</tbody>
</table>

The pilot saved Geisinger over 50,000. “The pilot was such a success that we rolled out this function to all departments in October 2013 and expect to see good results,” noted Wendling. “But it’s not all about the financial savings. A patient who comes to an appointment is a patient who is getting the care he or she needs.” By mid-January 2014, 55,000 patients had enrolled to receive appointment reminder text messages.
Conclusions

Would you change anything about the solution or the implementation? Do you have any additional lessons learned?

Wending shared these lessons:

- It’s important to be selective when applying mobile technology rather than apply it to everything.

- Consider your patient population and look for clinical and business use cases that are appropriate for the demographic that uses text messaging.

- For patient engagement projects, think about what patients would want to and be willing to do.

- Choose a relatively simple clinical topic for text messaging because the limited numbers of characters inhibits meaningful text with more complex topics.

As a result of the success of this pilot and a weight management text message pilot, Geisinger is testing and rolling out additional text message programs. They’ve implemented preventive care reminders for adults and children on a limited scale to determine their effectiveness. Additional projects being developed include post-discharge follow-up, medication reminder and Hepatitis C treatment programs.

mHIMSS is the globally-focused mobile initiative offered by HIMSS. As a cause-based, mission-driven 51-year-old non-profit, HIMSS created mHIMSS as a platform for all stakeholders within the global mobile community to drive positive, transformational change in health and healthcare through the best use of IT.