

Appointment and procedure reminders can lower no-show rates while helping to ensure patients receive appropriate and timely care.

Hospitals and health systems are under increasing scrutiny for the care they provide to patients. Fee-for-service is giving way to pay-for-performance models, accountable care organizations, patient-centered medical homes and other care and reimbursement models where health plans and providers share the risks – and the rewards – for the care of a specific patient population.

At the same time, hospitals are under intense pressure to cut costs. For many hospitals, surgeries can account for more than 50% of revenues, which means that cancellations can have a devastating effect on revenue. In a 2009 study, Tulane University Medical Center reported that a 6.7% cancellation rate reduced annual revenues by \$1 million.¹

Fortunately, the proliferation of cell phones has brought an unprecedented opportunity for hospitals and health systems to increase patient engagement and compliance while reducing

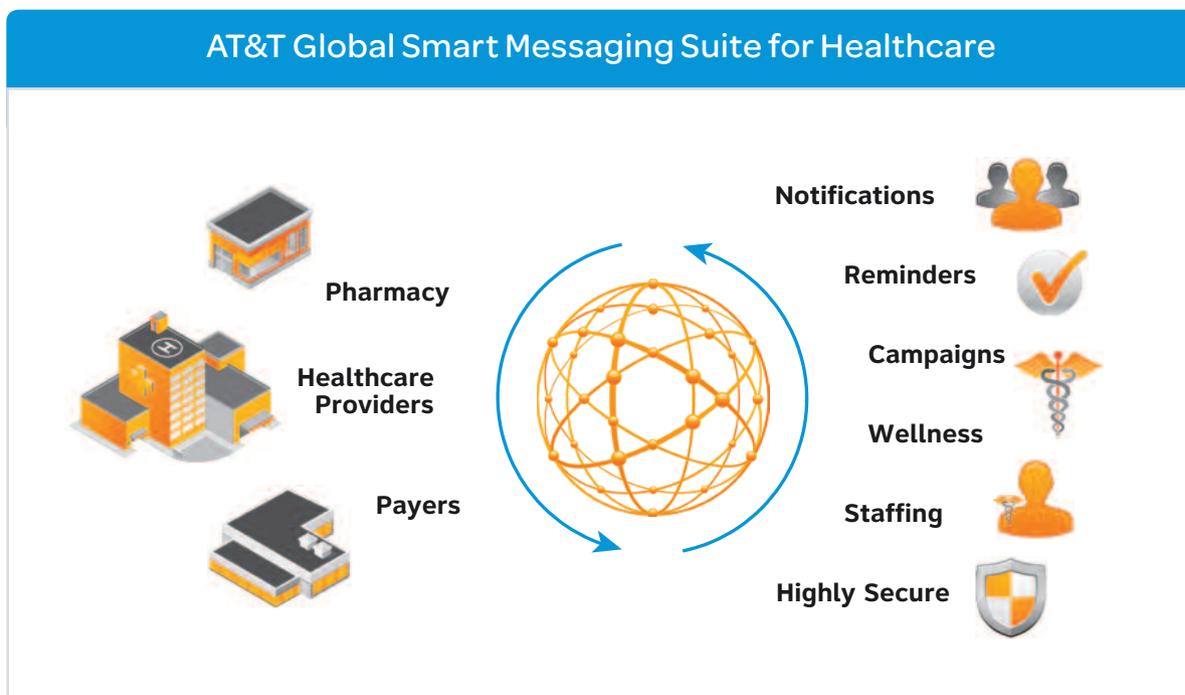
costs through the use of short message service (SMS) applications that are highly secure and enable compliance with HIPAA requirements. Any healthcare mobile messaging strategy must augment texting with highly secure e-mail and phone messaging to reach those who either can't or won't text.

Increasing Adherence Among Patients

Hospitals, healthcare systems and physician practices can use highly secure texting for:

- Appointment and procedure reminders
- Recall notifications
- Medication adherence reminders
- Patient education and health tips
- Instructions and directions
- Wellness messages
- Notification of immunizations or blood drives
- Payment reminders
- Administrative messaging

Appointment and procedure reminders not only help support patients in receiving appropriate, timely care, but they can also enhance revenue by lowering no-show rates. For example, a Kaiser Permanente



pilot of texting appointment reminders saved the organization \$150 per missed appointment, an annual savings of \$275,000 at a single clinic.²

Texting is an effective, low-cost way to encourage patients to care for themselves and adhere to their doctors' care plans, a crucial need for those with chronic diseases that account for 75% of healthcare costs.³ Texting can also automate care management. For example, SMS applications can be programmed to recall patients at appropriate intervals, to deliver educational messages, to alert patients to the need for immunizations and to explain their doctors' instructions.

The use of texting to alert and educate patients is new, but early studies indicate that it can be a powerful way to reach people. Here are some of the findings:

- A study by the Center for Connected Health, a unit of Partners Healthcare in Boston, found that daily texting of medication reminders and education improved treatment adherence, self-care behaviors, skin condition and quality of life among adolescents and adults with atopic dermatitis.⁴
- A review of 13 studies of electronic reminders, including texting, concluded that these reminders were effective in improving patient adherence to medications for chronic diseases. SMS reminders were especially effective, particularly for patients who had simply forgotten to take their meds.⁵
- A diabetes management study showed that 85% of participants adhered to their medical regimen with text message reminders, versus a 77% adherence rate for participants who didn't receive text messages.⁶

Must-Haves for an Effective Messaging Solution

While the use of texting in healthcare is fairly new, the technological requirements of mobile messaging are well understood. Solutions designed for healthcare enterprises should:

- Be delivered as a web-based, software-as-a-service (SaaS) product that's available to users virtually anywhere, anytime and doesn't place an additional burden on the organization's IT staff. With one solution supporting the entire enterprise, the complexity of managing multiple messaging solutions for individual departments or areas is eliminated.
- Be device and network agnostic. Organizations must be able to deploy text messaging with virtually any mobile platform, device or operating system. This is important among healthcare organizations that allow clinicians to bring their own devices to work, but also necessary for sending automated text messages to a broad patient population.
- Integrate with health information systems through a single Application Programming Interface (API) or set of protocols. The messaging system should accommodate a range of APIs, including those that use XML, HTTP, SOAP and JAVA interfaces. It should also support such protocols as SMPP, MM7, WAP.
- Automate workflows and processes to reduce costs and increase productivity. It should include features for automating messaging functions such as appointment reminders, health and wellness notifications and staff messages. It must also be able to automate the retrieval and deposit of core data from existing information systems to create personalized messages.
- Be highly secure and compliant in support of the latest HIPAA requirements for the privacy and security of personal health information (PHI). That includes bi-directional encryption of messages, using NIST standards. Additional security features should include remote wipe capability and automatic expiration of messages after a certain date. But remember that not all health-related messages contain PHI. Text messages can direct recipients to a call center or patient portal to receive personalized messages.

1. "Cancelled Surgeries Costing Hospitals Millions." *Anesthesiology News*, 2012: 38:5

2. "Kaiser Permanente Goes Mobile with Health Care." *mobileStorm* case study.

3. Centers for Disease Control and Prevention, "Chronic Diseases: The Power to Prevent, The Call to Control: at a Glance 2009."

4. "Text Messages as a Reminder Aid and Educational Tool in Adults and Adolescents with Atopic Dermatitis: A Pilot Study." *Dermatology Research and Practice*, 2010.

5. "The effectiveness of interventions using electronic reminders to improve adherence to chronic medication: a systematic review of the literature." *J Am Med Inform Assoc*, 2011.

6. Impact of a Text Messaging Pilot Program on Patient Medication Adherence." *Clinical Therapeutics*, 2012.

Desirable Features of a Robust Solution

- **Management and Reporting.** Managers must have the ability to assign user licenses and determine role-based user permissions, as well as request reports that are filtered by department, business unit, campaign, time period or user. The system must also provide a method to allow patients to opt in or opt out of messages in accordance with the Mobile Marketing Association best practices. List management should include options for market surveys, consumer polling, promotions and campaigns of various kinds, along with templates for creating common message types. Finally, the system should be able to store historical information for tracking delivery and receipt of messages for increased accountability and audit requirements.
- **Notifications and Campaigns.** A messaging solution must be connected to the proper data repository based on the type of messages sent. For appointment reminders, that would be the hospital or practice scheduling system, while a marketing campaign would require data on all patients who have opted in to the organization's registration system. More sophisticated messaging, like medication reminders, require connection with an organization's electronic health records (EHR) or clinical information system. Because most EHRs are not designed for patient engagement, organizations may have to use data warehouses or registries to setup the requisite messaging protocols.
- **Administration Applications.** Healthcare organizations can take advantage of one-to-many texting to facilitate some of their own administrative tasks, including staffing management, general or event-specific (such as weather emergencies) messaging and keeping track of employees in the field, such as home health workers.

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Conclusion

There is mounting evidence that texting can also be effective in communicating with patients to decrease costly no-shows and engage them more deeply in their own care.

Healthcare organizations will need a robust, highly secure, web-based messaging solution that's effective in one-to-many communications, but also allows two-way messaging where necessary. The solution must integrate with an organization's existing systems and be device- and network-agnostic to reach a maximum number of employees, members and patients.