How the Internet of Things (IoT) Will Transform Managed Care

Presented by RAM Technologies, Inc.
The Internet of Things (IoT) – interconnected devices, sensors and software – has the potential to transform managed healthcare by paving the way for new delivery models that improve the patient experience, reduce spending on chronic illness and improve outcomes. Emerging game-changers such as activity trackers, wearable biometric sensors, glucose monitors and “smart” medication dispensers are just some of the ways IoT technologies already are or will in the near future influence and improve managed care. 1-3

However, widespread adoption is not a given. Barriers exist, including poor Internet access among vulnerable populations; reliability, security and interoperability issues; and a lack of training and infrastructure among providers. But there is a path forward, and health plans are uniquely positioned to lead the way by helping providers and patients surmount barriers and weaving IoT technologies into the future of healthcare. 1, 4-5

CONNECTIVITY IS ALREADY CHANGING HEALTHCARE 1,6

Technology already links patients, providers and payers in numerous ways that are transforming the patient experience and the delivery of care. Patients are using mobile health apps and wearable devices that transmit data such as blood pressure and glucose readings to providers, allowing for remote monitoring and prompt intervention. Providers and payers can use IoT technologies to send messages to patients, reminding them to take medication, exercise and keep medical appointments. And payer portals allow members ready access to explore plans, networks and payment options, as well as special services, including highly targeted care management.
HOW THE IOT CAN IMPROVE MANAGED CARE 1,7-11

These trends have particular importance for high-need populations given their promise for assisting with chronic disease care and patient engagement. One oncology study found that patients assigned to a relatively low-cost intervention — digital reporting of symptoms that triggered caregiver alerts — experienced a five-month improvement in median overall survival. Another study found osteoarthritis patients who used an activity tracker coupled with a smartphone app experienced greater improvements in mobility and pain than those managed under standard protocols,

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and most patients and providers reported satisfaction with the technology. Numerous other studies suggest connected care will improve outcomes for patients with diabetes and other costly conditions, and as technology advances, so will the potential to improve myriad other aspects of managed care.

In its next phase, much of healthcare will move out of institutional settings (clinics and hospitals) and be transported to the home, with the smartphone as the data hub for measuring and managing health. That is the vision of Scripps Translational Science Institute Director Dr. Eric Topol. Dr. Topol foresees a future in which medical data originates with patients who use specially equipped smartphones and other devices that capture biometric data in real time, run routine tests, perform medical-grade imaging and track exposure to toxins. The resulting data will be analyzed by artificial intelligence, delivering actionable insights to clinicians and potentially immeasurable benefit to patients.
As providers increasingly embrace this vision and the promise of connected technology, they will see fewer missed appointments, improved adherence to care plans and improved outcomes such as reduced inpatient admissions.

These improved outcomes will be good for payers as well. The IoT will facilitate more effective assessment of value in healthcare. Data from connected devices, combined with analytics, will inform plan designs, incentive programs and disease management strategies. Payers will also be able to use the data to better understand and account for risk and to develop new, personalized products and programs.

BARRIERS TO FULL ADOPTION OF IOT IN HEALTHCARE 1, 9, 13-19

Like all new technologies, the IoT is not without its challenges. These barriers to success include:

**CONNECTIVITY:** Though Internet penetration has risen steadily over the past several years (84% overall in 2015, with smartphone ownership reaching 77% in 2016), these capabilities are decidedly lower among the populations that the IoT can most benefit, including the elderly, those with low education levels, lower-income populations, rural residents and minorities.
INTEROPERABILITY: Many devices are equipped with sensors that collect data, but the use of different languages makes communication with servers difficult. The use of proprietary protocols prevents sensors from communicating with each other, creating data silos and undermining the full potential of the IoT. Even when data does flow freely, many providers lack the infrastructure and know-how to access it.

SECURITY: Not all barriers are internal. Cyberattacks are a real and serious threat to the IoT. The frequency and scope of cyberattacks have increased worldwide, and providers and payers are particularly attractive targets. Almost half of respondents to a 2015 survey said they had integrated consumer technologies such as wearable health sensors or automated pharmacy systems with their IT ecosystems, but only 34% said they understood those devices’ security capabilities and risks, and only 58% had performed a risk assessment.

VALIDATION: Finally, a weak, fragmented regulatory system has not kept pace with innovation and offers inadequate safeguards of personal health information. Moreover, many health and wellness apps have neither undergone rigorous testing nor been developed with the input of patients. These factors contribute to patient and provider skepticism and apprehension.

Health plan leaders can take action today to support robust technology development by working with vendors and providing reimbursement for promising technologies that have undergone rigorous testing and are ready for market.
WHERE PAYERS FIT IN

Payers are in a unique position to facilitate adoption of IoT technologies in managed care. Health plan leaders can take action today to support robust technology development by working with vendors and providing reimbursement for promising technologies that have undergone rigorous testing and are ready for market. They can help increase consumer adoption by offering bonuses or discounts on wellness services, healthy foods, premiums and fitness programs. And payers that offer technological and infrastructure assistance to clinicians can benefit not only from healthier subscribers, but also from improved relations with their providers.

CONCLUSION

IoT technologies have the potential to transform healthcare delivery for the most vulnerable populations, but barriers to adoption must be overcome, and payers must lead the way. If these efforts are successful, IoT technologies hold great promise for aligning and deepening relationships among patients, providers and payers, all of whom share the same goals of better health, lower costs and improved experience.
References


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RAM Technologies is a leading provider of enterprise software solutions for healthcare payers. For over 36 years, RAM Technologies has led the way in the creation of superior software solutions for health plans serving government-sponsored healthcare programs (Managed Medicaid, Medicare Advantage, Federal Employee Health Programs, etc.). RAM Technologies has merited a top spot in the Philadelphia Business Journal’s “List of Top Software Developers” for eight consecutive years, has been featured in Inc. Magazine’s List of Fastest Growing Private Companies for five years and has been named Most Promising Insurance Technology Solution Provider by CIO Review. To learn more about RAM Technologies, call (877) 654-8810 or visit www.ramtechinc.com.