Executive Summary

Diabetes* is the seventh-leading cause of death in the United States and affects 26 million Americans. Another 57 million Americans have elevated blood sugar levels, which put them at increased risk for type 2 diabetes. These figures are projected to double by 2025.¹

A typical employer spends $18 million to $22 million on direct medical care for people with diabetes covered in their health plans.² These numbers jump notably when adding indirect costs, such as lost work time, reduced productivity, disability expenses, and premature deaths – adding up to $159 billion in costs to U.S. employers.³

As the number of Americans with diabetes continues to grow, corporations are increasingly searching for opportunities to improve the health of their employees and reduce healthcare costs. The long-term success of these investments, however, depends heavily on employees adopting and maintaining healthy behaviors to manage their conditions.

This case study will outline a strategic approach that enhances current disease management programs with an innovative solution that integrates clinical, behavioral, and motivational software solutions with everyday technologies like the internet and mobile phone.

*As used in this whitepaper, unless the context requires otherwise, the term “diabetes” refers to adult Type 2 diabetes
Diabetes is the seventh-leading cause of death in the United States and affects 26 million Americans. Another 57 million Americans have elevated blood sugar levels, which put them at increased risk for type 2 diabetes. These figures are projected to double by 2025.

The growing prevalence of chronic disease is especially hard on our nation’s employers. People with diabetes have medical expenditures 2.3 times higher than would be in the absence of diabetes. A typical employer spends $18 million to $22 million on direct medical care for people with diabetes covered in their health plans. These numbers jump notably when adding indirect costs, such as lost work time, reduced productivity, disability expenses, and premature deaths – adding up to $159 billion in costs to U.S. employers.

As the number of Americans with diabetes continues to grow, corporations are increasingly searching for opportunities to improve the health of their employees and reduce healthcare costs. The long-term success of these investments, however, depends heavily on employees adopting and maintaining healthy behaviors to manage their conditions. Current disease management programs alone do not provide the timely coaching and intervention required to support people with diabetes due to the infrequent and unscalable interactions.

This case study will outline a strategic approach that enhances current disease management programs with an innovative solution that integrates clinical, behavioral, and motivational software solutions with everyday technologies like the internet and mobile phone. And how AT&T has launched an enterprise-ready mHealth solution that combines WellDoc’s DiabetesManager application and feedback engine with AT&T’s highly secure hosting environment, support and customer care – specifically designed to enable AT&T and its customers to comply with all applicable HIPAA requirements.

The Bottom Line

Employers, health plans and disease management organizations must transform how they address the challenges of chronic disease. The impact of chronic illnesses like type 2 diabetes is high – both to the patient’s quality of life and the financial costs to the United States health system. The incidence of type 2 diabetes has reached epidemic rates, and despite the availability of widespread healthcare in the United States, only 1 in 8 people with diagnosed diabetes achieved therapeutic targets for blood glucose, blood pressure, and LDL.

The challenge

Improving chronic care management requires on-going support, individualized with real-time, evidence-based coaching that fits into the lifestyle of the person living with diabetes.

Chronic conditions like diabetes are one of the most pressing healthcare challenges of the 21st century.

Chronic disease management is in dire need of innovation. Effective chronic disease management requires support and resources outside the four walls of the healthcare providers’ organization, calling for a combination of patient self-care and timely evidence-based interventions to shift healthcare delivery from a reactive to a proactive mode.

Patient engagement is required. Effectively managing a chronic disease typically involves patient lifestyle changes, the development of new skills and careful monitoring of conditions. People with diabetes can no longer be passive recipients of healthcare services. What they do for themselves on a daily basis (for example, medication adherence, food choices, exercise and diet) influences their health far more than the interventions of healthcare providers alone.

Self-management is complex. Diabetes is primarily a self-managed condition. However, self-management is often complex, demanding, and difficult to sustain over time. Diabetics need to understand a wide range of nutritional and dietary information and medical data, as well as recall complex treatment and testing instructions. It is no wonder that only 39 percent of patients with type 2 diabetes achieve success in their self-management behaviors.

A shift from episodic to continuous care is needed. Healthcare is organized around an acute, episodic model of care that does not meet the needs of patients with chronic conditions. Typically, physicians have 15 minutes or less during a patient office visit to examine patients, review charts, analyze data and answer questions. Patients may only see their physician two or three times a year, making it difficult for them to receive the levels of support and feedback that are essential for proper care management.

Healthcare providers don’t get the data they need. Since people with diabetes only see their physician and other care providers infrequently, their providers have limited, and/or incomplete information to use as a basis for treatment or medication modifications.

Primary care physicians aren’t always aware of the latest evidence-based guidelines. There simply are not enough endocrinologists to treat everyone who has diabetes. As the gatekeepers to our healthcare system, primary care doctors see and treat the vast majority of patients in the United States. With an overwhelming amount of new research published every month, and given the complexity of conditions such as diabetes, it is not realistic to expect primary care physicians to know and treat to the latest evidence-based guidelines.

Healthcare workforce shortages are expected to rise. A rapidly-aging baby boomer population coupled with the growth in the number of people with multiple chronic diseases will place increased resource requirements on the healthcare infrastructure. Healthcare organizations will need to provide better care for more people without a corresponding increase in available resources. While the overall demand for direct care workers such as nurse aides, home health aides and paraprofessional caregivers will increase by 34 percent, and there is no corresponding increase in the numbers of people entering these roles.

The role of disease management programs in supporting chronic disease care. Employers and payers typically use disease management programs to improve the health of, and reduce the costs incurred by, chronic disease patients.

However, the increases in chronic disease and associated costs highlight that traditional disease management programs have not lived up to their promise. The Medicare Health Support disease management programs and other demonstration projects report limited success. It is unlikely that the current state of programs can scale to meet rising needs because of the following challenges:

- Expensive high touch. Most disease management services rely on specially-trained nurses calling or visiting patients on a periodic basis. This approach doesn’t provide real- or near real-time insight into a patient’s condition, and depends upon large-scale engagement of a shrinking healthcare workforce.
A disease management platform on mobile devices. In 2009, cellular penetration in the US crossed 90% of the population for the first time in U.S. history, topping 285M subscribers10, with monthly SMS message volume growing from 5.8 billion messages in 2005 to over 1 trillion in 200911. This illustrates the opportunity mobile devices and networks present as a low-cost platform to engage patients and care teams, and provide actionable information virtually anywhere, at any time, and in a manner that fits into the day-to-day lives of patients and the clinical workflow of healthcare providers.

The Strategy

Engage people with an innovative approach to diabetes by integrating clinical, behavioral, and motivational applications with everyday technologies like the Internet and mobile phone.

A Multi-Dimensional Approach to Diabetes Management

At the heart of a new care model is data — not just the capture of data, but the intelligent, relevant and timely use of it — and turning data into information, knowledge, action and ultimately outcomes. Existing technologies can enable this new care model and transform chronic disease care through improved care coordination and collaboration.

The Solution

A comprehensive FDA-cleared, enterprise-ready mHealth solution that delivers tools to analyze and translate health data into valuable information and actionable knowledge for patients, healthcare providers, insurers, employers and disease management companies. AT&T mHealth Solutions presents DiabetesManager® — a comprehensive FDA-cleared mobile diabetes management system that goes beyond simple data collection and sharing to analyze and translate health data into relevant, valuable and actionable information for patients, healthcare providers, insurers and disease management companies. This enterprise-ready solution provides a platform for employers and disease management organizations to better engage their members in chronic disease care.

How it Works

DiabetesManager® is the first mobile disease management solution to receive United States Food and Drug Administration (FDA) 510(k) clearance that provides automated real-time feedback and behavioral coaching for people with Type 2 diabetes. Using an approved data-enabled mobile device on any cellular network, DiabetesManager® allows an individual with diabetes to capture, store and transmit in
real-time blood glucose data and other diabetes self-management data in a highly secure way. Real-time feedback based on blood glucose values coaches people on responses to high and low levels and provides education about glucose, food, and medication control.

The comprehensive solution then goes one step further with an expert system — analyzing the real-time patient data to identify trends, areas for concern, and teachable opportunities. This expert system further coaches the patients on how to manage various aspects of their disease while also delivering data to the healthcare team, thus enabling appropriate care plan adjustments.

At the system’s foundation is a seamless integration of technology, real-time data, analytics, ease-of-use and collaboration that ultimately is intended to drive improved metabolic outcomes and reduced healthcare costs.

Clinical Impact
An earlier version of DiabetesManager was studied in a 12-month randomized controlled trial and demonstrated an average A1C reduction of 1.6% vs. 0.7% in the control group (usual care alone), a difference of 0.9% (P<.003).

Closing the Loop on Diabetes Care Management
DiabetesManager® is a comprehensive mobile disease management solution that addresses key challenges.

Connecting Stakeholders
Combining mobile and Web-based technologies allows critical real-time patient data to be shared by key stakeholders in a highly secure environment, supporting more effective population management and individual patient care.

Engaging Patients
Managing diabetes is a day-to-day activity requiring a complex range of patient behaviors and compliance. On-going monitoring of glucose levels and other health data allows for better collaboration and timely treatment modifications to help prevent expensive acute episodes. Timely, relevant education and patient coaching provides patients the support the need to better self-manage their condition and live healthier lives.

Analyzing Data
Real-time patient data allows case managers to create rapid, accurate interventions and lifestyle guidance, and allows insurers and disease management organizations to better understand and respond to trends across populations.

AT&T
AT&T mHealth Solutions presents DiabetesManager® is an offering of AT&T ForHealth, a practice area that is accelerating the delivery of new wireless, networked, and cloud-based solutions to help the healthcare industry improve patient care and reduce costs nationwide.

Operationally, AT&T has launched an enterprise-ready mHealth solution and AT&T’s scalable Customer Care model.

The end-to-end solution has been specifically designed for enhanced user experience and to enable AT&T and its customers to comply with all applicable HIPAA security and privacy requirements.

With our commitment to healthcare accessibility, AT&T has also made a conscious decision to roll-out a solution that works across any telecommunications network (both AT&T and non-AT&T), and mobile devices from many manufacturers. The solution works on the web, and is intended to work with a wide range of mobile phones, feature phones, smartphones, and tablets.

Enhances Existing Disease Management Programs
AT&T mHealth Solutions presents DiabetesManager® augments existing disease management programs to support payers, health plans and self-insured employers in their efforts for effective diabetes management. The solution’s goal is to help improve patient health and wellness outcomes by providing tools to:

- Risk-stratify patients
- Enhance program engagement
- Effectively leverage healthcare investments
- Expand healthcare reach geographically and socially

Notes
1. (Hewitt)
2. (Hewitt)
3. (American Hospital Association)
4. (Cheung, 2009)
5. (Centers for Disease Control, 2011)
6. (American Diabetes Association)
7. (Peyrot, Rubin, Lauritzen, & al., 2005)
8. (Institute of Medicine, 2008)
9. (Kuratis, 2007)
10. (PricewaterhouseCooper’s Health Research Institute, 2010)
11. (Source: CTIA)
12. (Source: CTIA)
13. (Deloitte Center for Health Solutions, 214009)
**Works Cited**


American Hospital Association. (n.d.). *Healthy People are the Foundation for a Productive America.*


For more information contact an AT&T Representative or visit www.att.com/healthcare.