



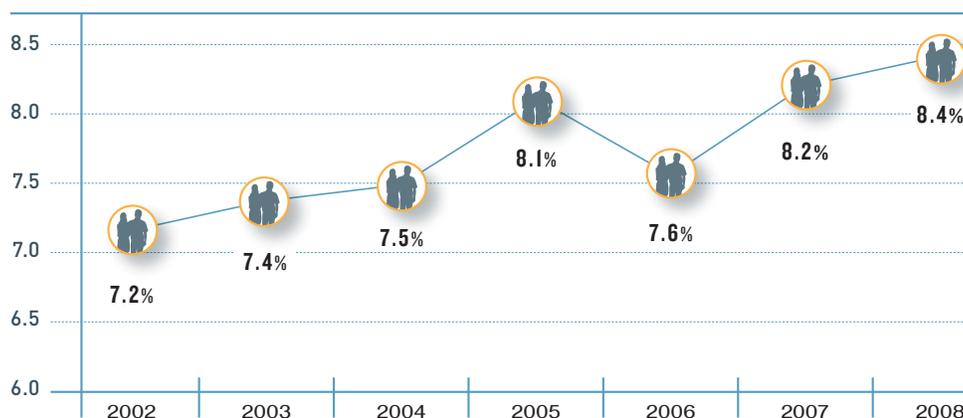
DIABETES: A HIDDEN HEALTH CARE COST DRIVER IN NEW YORK

An Analysis of Health Care Utilization and Trends of Patients with Diabetes in New York State

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More than 1.8 million New York State residents have diabetes,¹ and diabetes prevalence continues to rise (see Figure 1). Another 3.7 million to 4.2 million New Yorkers are estimated to have pre-diabetes.² The total cost for New Yorkers with diabetes was almost \$12.9 billion in 2006. This includes excess medical costs of approximately \$8.7 billion and lost productivity costs of \$4.2 billion.³ On average, the cost of health care for a person with diabetes is more than five times as much as the cost for those without diabetes—\$13,000 vs. \$2,500.⁴ In response, the New York State Health Foundation (NYSHealth) launched a \$35 million, five-year Diabetes Campaign in 2008 to reverse the diabetes epidemic. As part of this initiative, the Campaign is working with Healthcare Association of New York State (HANYS) to improve diabetes care and outcomes.

FIGURE 1. Estimated Adult Diabetes Prevalence in New York State, 2002–2008



Source: New York State specific BRFSS estimates, CDC.

¹ 1.1 million New Yorkers have been diagnosed with diabetes and approximately 760,000 more have diabetes but do not know it.

² Cowie C., et al. (2008). Full accounting of diabetes and pre-diabetes in the U.S. population in 1988–1994 and 2005–2006. *Diabetes Care*, 32(2): 287–294.

³ American Diabetes Association, The Estimated Prevalence and Cost of Diabetes in New York, American Diabetes Association Web site, <http://www.diabetesarchive.net/advocacy-and-legalresources/cost-of-diabetes-results.jsp?state=New+York&district=0&DistName=New+York+%28Entire+State%29>, accessed July 7, 2010.

⁴ Hogan P., Dall T, Nikolov P. (2003). Economic costs of diabetes in the U.S. in 2002. *Diabetes Care*, 26(3): 917–32, cited in <http://ahrq.hhs.gov/qual/diabqual/diabguideref.htm#hogan2003>.

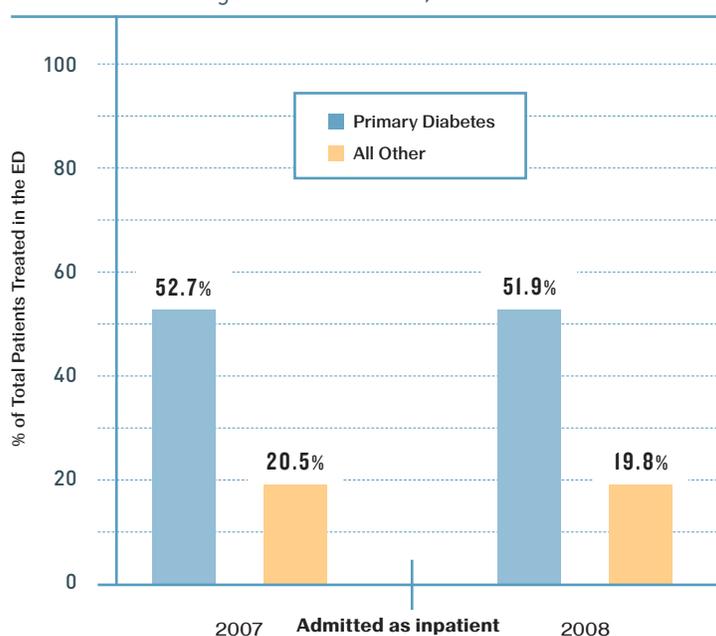
In order to better understand how diabetes contributes to health care costs in New York State, HANYS analyzed New York health care utilization by patients diagnosed with diabetes. Using 2000–2008 Statewide Planning and Research Cooperative System (SPARCS) data, 2007 Medicare Limited Data Set Standard Analytic Files 5% version, and the Behavioral Health Risk Factor Surveillance System (BRFSS), HANYS revealed several important findings that illustrate the role that diabetes is playing in driving costly health care utilization.

EMERGENCY DEPARTMENT UTILIZATION

FINDING: More than half of emergency department (ED) visits for people with uncontrolled diabetes resulted in a hospital admission compared to 20% for all others.

Analysis of the 2007 and 2008 SPARCS data revealed that more than 50% of the visits to New York EDs by those presenting with a primary diagnosis of diabetes⁵ were admitted to the hospital. This is compared to 20% of people without a primary diagnosis of diabetes (see Figure 2).

FIGURE 2. Emergency Department Utilization with a Primary Diagnosis of Diabetes, 2007–2008



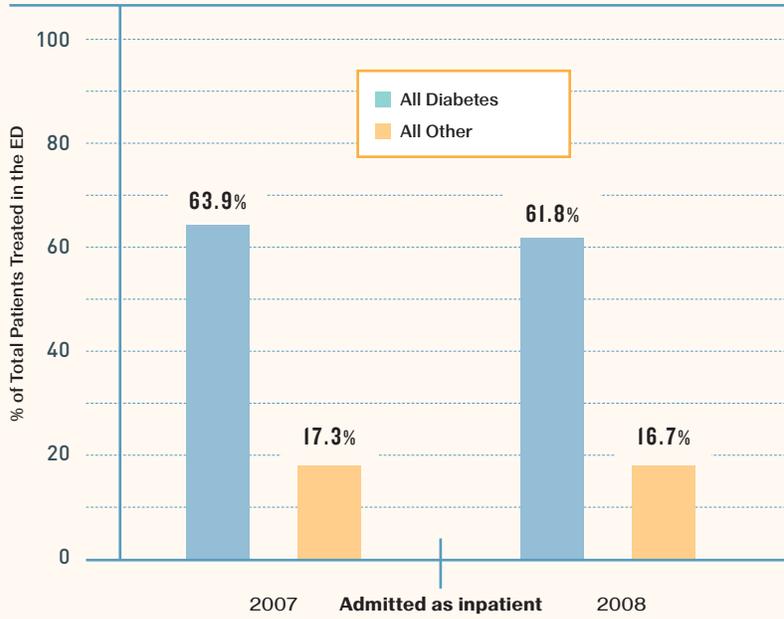
Source: SPARCS, 2007–2008.

FINDING: More than 60% of the visits to the ED by patients with diabetes—regardless of the reason for the visit—resulted in an admission to the hospital compared to 17% of visits by people without diabetes.

More than 60% of the visits to the ED by patients with diabetes resulted in admission to the hospital. This includes those with the primary and secondary diagnoses of diabetes. This is a striking contrast to the 17% of people without diabetes who are admitted as an inpatient following a visit to an ED (see Figure 3).

⁵ Primary diagnosis of diabetes mellitus was identified using International Classification for Diseases, 9th Revision Clinical Modification (ICD-9-CM) Codes 250 and 648.0.

FIGURE 3. Emergency Department Utilization with a Primary or Secondary Diagnosis of Diabetes, 2007–2008



Source: SPARCS, 2007–2008.

INPATIENT ADMISSIONS

FINDING: The percentage of hospitalizations for diabetes in New York has steadily increased, rising by nearly 30% from 2000 to 2008.

Although the number of inpatient admissions in New York State is rising each year, the percentage of those visits that occur by patients with diabetes is rising at a larger rate. In 2008, 18.7% of total admissions were patients with a primary or secondary diagnosis of diabetes.⁶ This shows a steady increase from 2000 where only 14.4% of total admissions were patients with diabetes (see Figure 4).

FIGURE 4. Total Inpatient Admissions for Patients with Diabetes as a Percentage of Total Inpatient Admissions in New York State, 2000–2008



Source: SPARCS, 2000–2008.

⁶ Diabetes admissions were identified if they had a primary or secondary diagnosis of diabetes mellitus. Primary or secondary diagnosis of diabetes mellitus was defined using International Classification for Diseases, 9th Revision Clinical Modification (ICD-9-CM) Codes 250 and 648.0.

FINDING: Diabetes accounts for 84% of all admissions growth from 2000–2008.

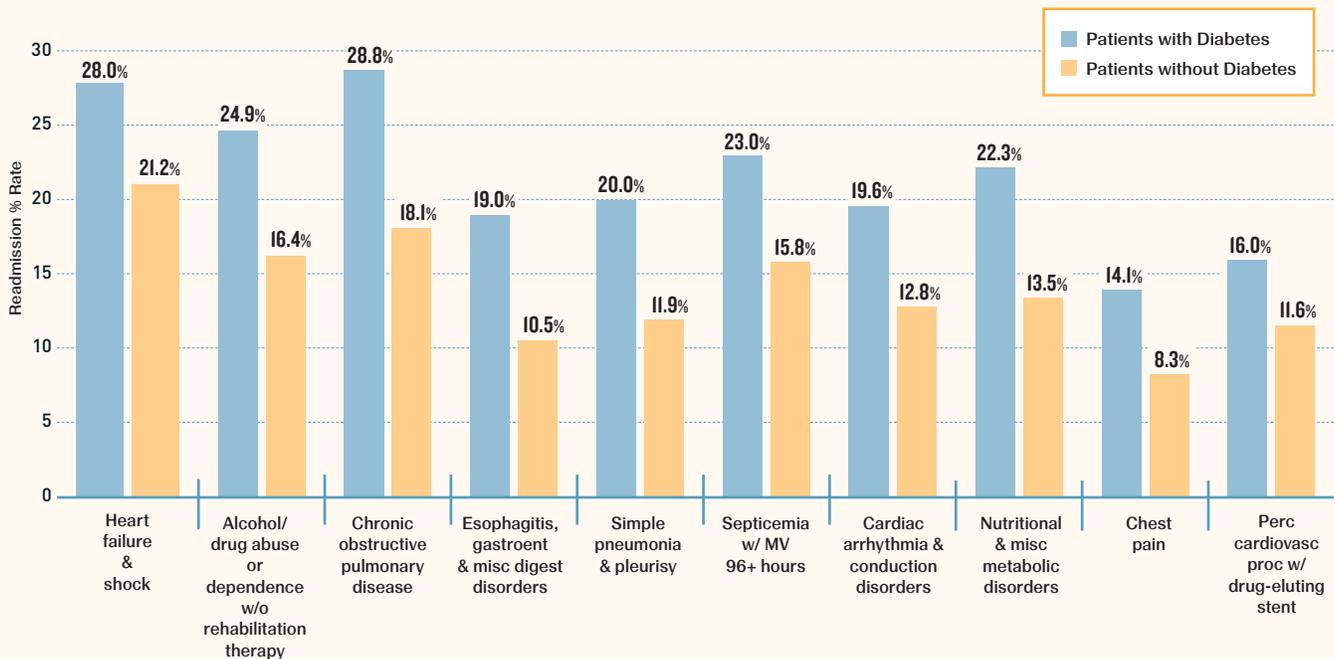
Further analysis of admissions data reveals that 84% of all admissions growth is attributable to patients with diabetes. Total inpatient admissions have increased by nearly 163,000 and admissions for patients with either a primary or secondary diagnosis of diabetes increased by nearly 137,000 since 2000.

INPATIENT READMISSIONS

FINDING: Overall, patients with diabetes are 1.6 times more likely than patients without diabetes to be readmitted to a hospital within 30 days.

Patients with diabetes have an overall readmission rate of 20.6%, which is 1.6 times the rate of patients without diabetes (12.5%).⁷ When looking at the most common reasons for initial admissions, patients with diabetes are more likely to be readmitted regardless of the reason for their initial admission (see Figure 5).

FIGURE 5. Readmission Rates of the Top 10 Admission Diagnosis-Related Groups (DRGs), 2008



Source: SPARCS, Dec 1, 2007–Dec 31, 2008. Excludes rehabilitation, neonates, obstetrics, and transfers.

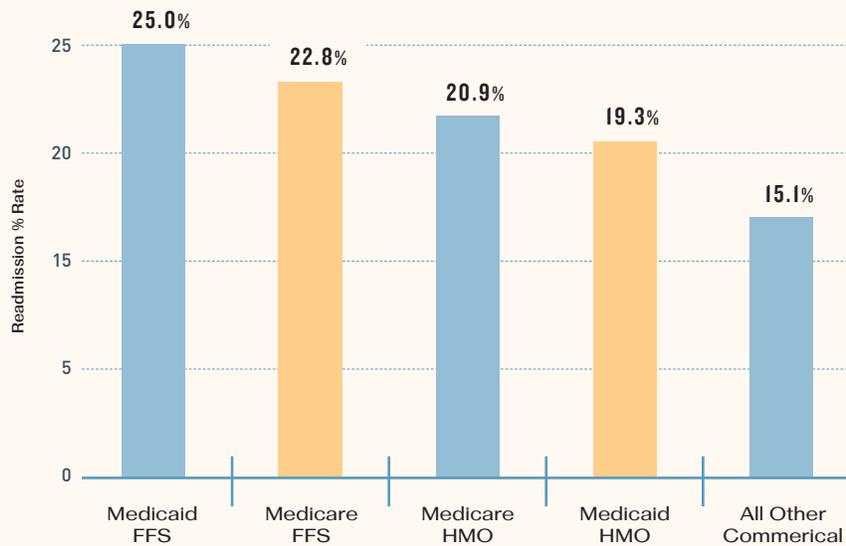
FINDING: Readmission rates are higher for patients with diabetes across all payers.

The readmission rates for patients with diabetes are higher than rates for patients without diabetes regardless of payer⁸ (see Figure 6). Government beneficiaries have the highest rates with rates for Medicaid fee-for-service patients at 25.0%, Medicare fee-for-service at 22.8%, Medicare managed care at 20.9%, and Medicaid managed care at 19.3%. Commercial payers have the lowest readmission rate (15.1%); however, that rate is still higher than the readmission rate for patients without diabetes (12.5%).

⁷ Readmission rates were determined using 2008 SPARCS data and include all acute inpatient admissions in New York State hospitals. If a patient is admitted to an acute care hospital within 30 days of being discharged from an acute care hospital, it is counted as a readmission. Readmissions can occur in the same facility or a different facility within New York State. The readmission analysis produced 30-day, unadjusted, all-cause readmission rates. All-cause rates mean that the second admission may or may not be clinically related to the initial admission.

⁸ Payer was identified using the primary payer reporting on the initial admission. In the case of an initial admission involving a transfer, the primary payer recorded by the receiving institution was used.

FIGURE 6. 30-Day Readmission Rates of Patients with Diabetes by Payer, 2008



Source: SPARCS, Dec 1, 2007-Dec 31, 2008. Excludes rehabilitation, neonates, obstetrics, and transfers.

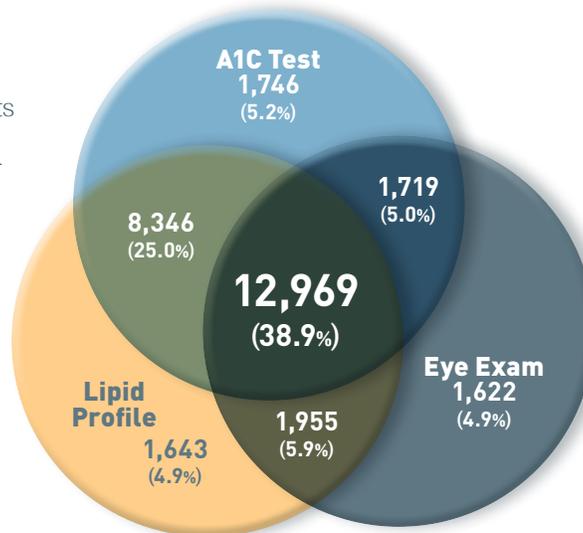
ROUTINE DIABETES CARE

FINDING: Only an estimated 39% of the patients in New York’s Medicare population are receiving recommended routine testing and evidence-based practices, and 10% are not receiving any of the recommended routine testing and evidence-based practices.

The utilization findings are not surprising given the suboptimal care many patients with diabetes receive. A national study indicated that people with diabetes receive only 45% of recommended clinical care based on national guidelines for screening, diagnosis, treatment, and follow-up.⁹ HANYS’ analysis¹⁰ of sample data of more than 33,000 Medicare patients showed that in New York, patients with Medicare were not receiving all of the screening tests that are critical to managing diabetes and preventing complications. In 2007, although 74.4% had at least one A1C test, 74.8% had at least one lipid profile test, and 54.8% had at least one eye exam, most were not receiving all the screening tests. (See Figure 7.) Only 39% received all of the recommended tests, and 10% did not receive any tests.

FIGURE 7. Percentage of Patients with Diabetes Receiving Routine Diabetes Care in a Professional or Outpatient Setting, 2007

Source: 2007 Medicare Limited Data Set Standard Analytic Files 5% version.



⁹ McGlynn EA., et al. (2003). The quality of health care delivered to adults in the United States. *The New England Journal of Medicine* 348(26): 2635–645.

¹⁰ HANYS identified the utilization of routine care components on the Medicare Limited Data Set Standard Analytic Files 5% version using common procedural terminology (CPT) codes according to the CMS National Measurement Specifications Diabetes Quality of Care Measures, 2006.

DISCUSSION

The data presented in this brief highlight the urgent need to address diabetes as an important—and often hidden—driver of increasing health care utilization. The data show that patients with diabetes incur higher rates of admission to hospital EDs and higher rates of 30-day readmissions, regardless of primary diagnosis. The data also confirm that patients with diabetes are not getting the preventative care they need. There is ample evidence about what works to prevent diabetes and its complications, yet there is not a simple solution to reduce potentially avoidable readmissions, hospitalizations, and ED visits related to diabetes, or to ensure that New Yorkers with diabetes get the best care and achieve the best outcomes. Addressing this issue requires comprehensive solutions with contributions from multiple stakeholders.

The current health care landscape offers numerous opportunities: the passage of Federal health reform; the expanded body of evidence regarding clinical practice; a shift toward more comprehensive care management payment models; the implementation of new models of health care delivery, such as the Patient-Centered Medical Home; the availability of Federal incentives for achieving “meaningful use” through health information technology; and the advent of efforts to create bundled payment programs and Accountable Care Organizations.

These forces have increased the focus on the management of chronic conditions, as well as outcomes-based payment incentives and other payment reforms. With this new focus come opportunities to implement solutions that better measure, monitor, manage, and pay for diabetes care and better outcomes. These opportunities have the potential to lead New York away from a historically misaligned payment and delivery system, one that has been characterized by paying for volume instead of value, incentivizing suboptimal care, and merely shifting escalating costs instead of containing them.

Hospitals are only one player in the care continuum, and thus cannot achieve significant improvements in these outcomes on their own. Success depends on the availability and coordination of adequate primary care services, and the engagement of patients through the provision of diabetes self-management education (DSME). Moreover, policy and payment systems must be aligned across the system to enable providers to smoothly integrate transitions in care and services.

RECOMMENDATIONS

Based on this preliminary assessment in New York, we offer the following recommendations for the health care payment and delivery system:

HEALTH CARE PAYMENT

Provide Financial Incentives to Providers

Well designed financial incentive programs are critical to rewarding physicians and practices for implementing successful patient care delivery systems and improving patient outcomes. Many payers are engaged in efforts to transform the delivery system, and some—not all—are providing financial incentives to providers for improving their diabetes outcomes. However, New York needs a critical mass to drive broader change. The more payers providing incentives for diabetes standards of care and the more alignment among programs, the clearer the validation signal will be to providers about what matters most in diabetes care and outcomes, and the greater providers’ motivation will be to implement practices that improve outcomes into their delivery of care. Both payers and the system as a whole will reap the benefits of doing this through reduced readmissions, hospitalizations, and ED visits.

Emphasize Patient Outcomes in Financial Incentives Programs

Of the incentive programs that currently exist, many emphasize clinical process or care delivery process measures to assess quality and to trigger incentive payments. These measures assess whether diabetes-related screenings, such as blood pressure screenings or eye exams, are administered to patients. Although process measures are important, in and of themselves they do not guarantee that patient outcomes will improve.

For that reason, we recommend including intermediate outcome measures for diabetes, particularly those that are most tightly linked to patient risk reduction in their incentive programs. These intermediate outcome measures—also known as the diabetes ABCs—are the poor and superior control measures for Hemoglobin A1c, Blood pressure, and LDL Cholesterol (see sidebar). These measures, as well as four critical process measures, can be demonstrated and verified by achieving recognition through the National Committee on Quality Assurance’s (NCQA’s) Diabetes Recognition Program

or Bridges to Excellence's (BTE's) Diabetes Care Recognition Program. Working with HANYS and other statewide partners, the NYSHealth Diabetes Campaign is supporting efforts to encourage and assist 3,000 primary care providers to improve their care and obtain recognition under these programs. We recommend that payers incorporate these programs to trigger rewards or incentive payments.

Reimburse for What Produces Positive Patient Outcomes

Improvements in diabetes outcomes require adequate reimbursement to create and sustain the health care infrastructure and systems of care that produce positive patient outcomes. This includes reimbursement for DSME and training, team-based care, and care coordination.

HEALTH CARE DELIVERY

Ensure the Adoption of, and Adherence to, Evidence-Based Clinical Practice Guidelines

Adoption of, and adherence to, diabetes clinical practice guidelines is critical to improve diabetes outcomes in both inpatient and outpatient settings. This requires building systems to ensure that patients with diabetes get the right care at the right time and in the right place. It also requires ongoing monitoring to ensure that the systems and patient outcomes are sustained over time. Many hospitals and their outpatient clinics employ a variety of strategies to monitor their diabetes outcomes, including quality dashboards and individual provider and practice reports. Recognition under the NCQA and BTE programs also enables hospitals and providers to assess, improve, and monitor their diabetes outcomes.

Support Diabetes Self-Management Education

Evidence shows that DSME can improve outcomes for people with diabetes by helping them manage their disease and prevent complications. Hospitals can develop and support DSME programs, certified diabetes educators,¹¹ diabetes centers,¹² and community health workers. Hospitals also might consider ways to expand the roles of staff, such as nurses or medical assistants, to better support DSME.

DIABETES MEASURES
Hemoglobin A1c > 9.0%*
Hemoglobin A1c < 8.0%
Hemoglobin A1c < 7.0%**
Blood pressure ≥ 140/90 mm Hg*
Blood pressure < 130/80 mm Hg
LDL cholesterol ≥ 130 mg/dl*
LDL cholesterol < 100 mg/dl (dl)
Eye examination
Foot examination
Nephropathy assessment
Smoking status and cessation advice or treatment

* Denotes poor control
** When appropriate

¹¹ As of January 1, 2009, New York State Medicaid began reimbursing for select CDE services in some clinical settings. Medicare also reimburses for similar CDE services.

¹² Diabetes centers that are recognized by the American Diabetes Association or accredited by the American Association of Diabetes Educators are eligible for Medicare reimbursement for some services.

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