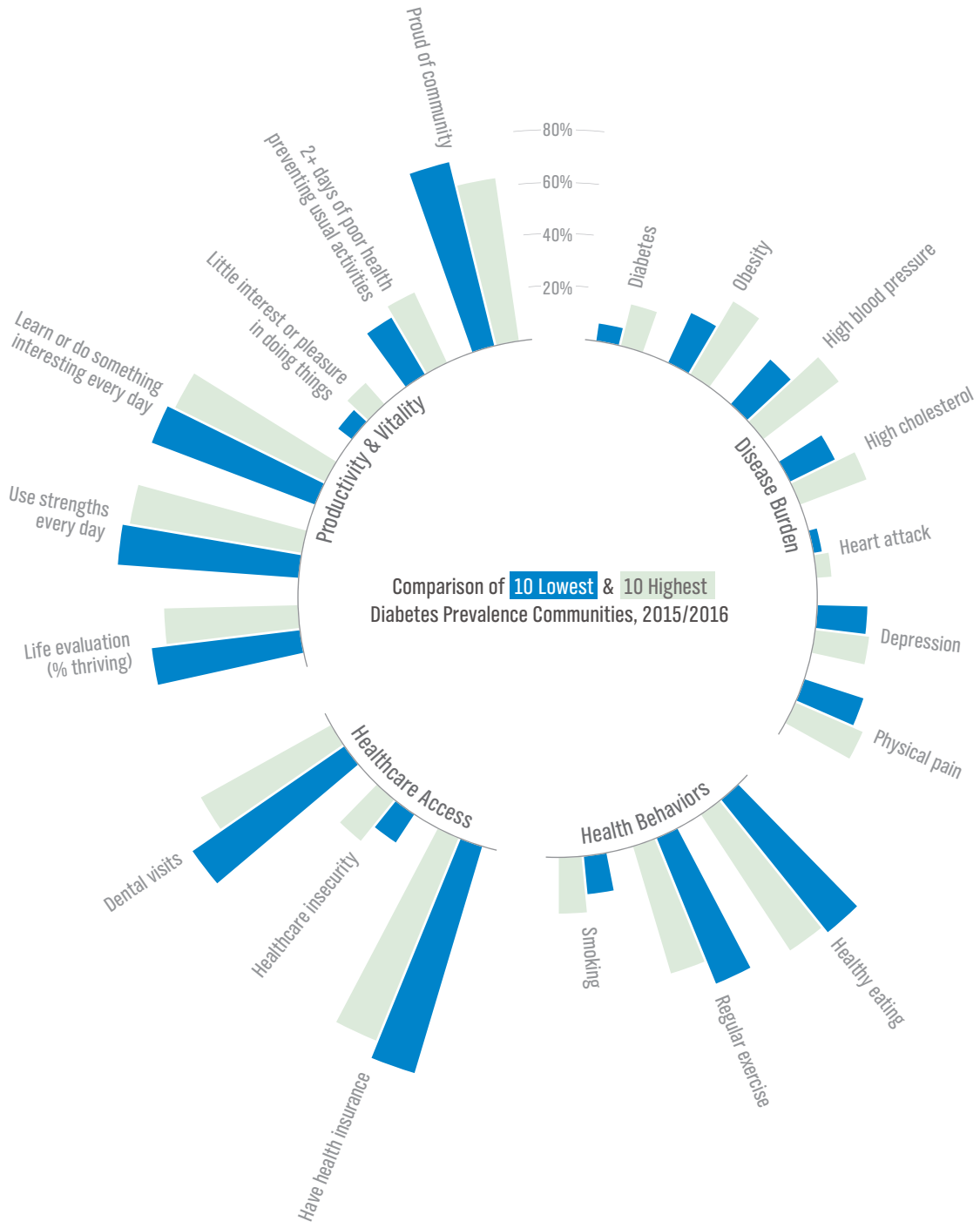
STATE OF AMERICAN WELL-BEING

The Cost of Diabetes in the U.S.: Economic and Well-Being Impact



Gallup · Sharecare
Well-Being Index™

While most clinicians agree that managing diabetes improves health and reduces medical costs, the benefit to employers also extends to a more productive workforce.

An opportunity exists for employers to partner with the medical community, specifically Certified Diabetes Educators at local and regional hospitals, to offer diabetes education and training to their employees with diabetes. This collaboration has tangible and proven value for both the individual and the company's bottom line.

– Sheila Holcomb, RD, LD, CDE,
Vice President,
Sharecare Diabetes Solution

This report, part of the Gallup-Sharecare ***State of American Well-Being*** series, examines the relationship of diabetes with important well-being metrics and presents an analysis of the cost of diabetes on key aspects of the U.S. economy. Overall, the prevalence of diabetes in the U.S. adult population is growing, up a full percentage point in the last eight years, from 10.6% in 2008 to 11.6% in 2016, and at 11.5% for the first nine months of 2017.

The rising prevalence, not surprisingly, has increased healthcare costs. If the diabetes rate had remained at its 2008 level, about 2.3 million fewer U.S. adults would have the disease today, and healthcare costs due to diabetes would be an estimated $19.2 billion less than current costs.

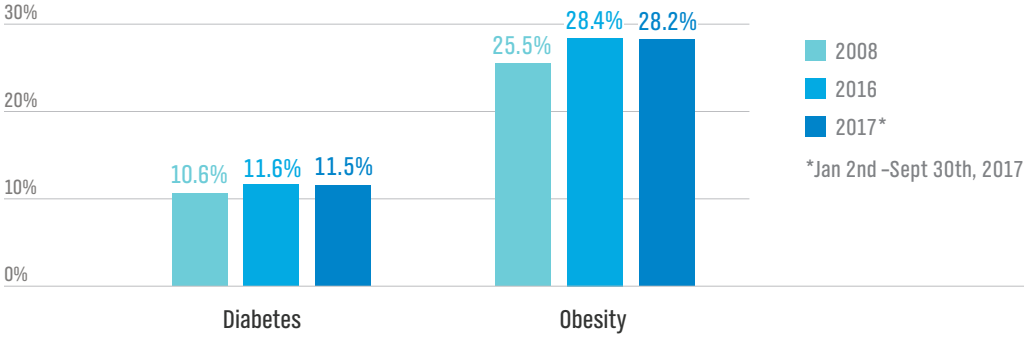
Diabetes not only impacts the U.S. economy through direct costs, but also through lower employee productivity due to unplanned absenteeism. After controlling for all major demographics as well as BMI weight class, over 57 million additional unplanned days of work are missed each year by workers who have diabetes as compared to workers without diabetes. This costs U.S. employers $20.4 billion annually.

While high diabetes prevalence takes a toll on communities, conversely communities with low diabetes rates perform better on several well-being metrics. Communities with low diabetes prevalence have significantly lower disease burden for other chronic conditions, such as lower rates of obesity, lower rates of heart disease (high blood pressure, high cholesterol, heart attack), less reported physical pain and lower prevalence of diagnosed depression. Positive health behaviors are better established in communities with low diabetes rates – a higher percentage of residents exercise regularly and eat healthy, while a lower percentage of residents smoke.

Residents of low prevalence communities also report better access to healthcare – higher rates of health insurance, more regular dental visits, and fewer residents who struggle to afford healthcare. Communities with low diabetes prevalence are more likely to think about and evaluate their lives highly. Finally, they are more likely to have residents who are productive and vital based on key purpose and community well-being metrics including using strengths every day, learning or doing something interesting daily, and feeling pride in their community.

Unfortunately, there are many factors that suggest diabetes rates will continue to rise in the U.S. The alarming increase in the nation's obesity rate is one factor. Obesity, a key risk factor in the development of type 2 diabetes, is up almost 3 percentage points from 2008 to 2016, and is holding steady at over 28% in the first nine months of 2017. Health systems, hospitals, physician groups, employers, community leaders and other champions of population health are responding by implementing inpatient and outpatient solutions to help people better manage diabetes and prevent those at risk from developing the disease. These interventions can have a systemic and positive lasting impact on patients, employers, and the communities in which they reside.

Prevalence of Diabetes & Obesity in the U.S., 2008, 2016, and YTD 2017



As a part of the Gallup-Sharecare Well-Being Index, diabetes prevalence is measured by asking individuals: *Has a doctor or nurse ever told you that you have diabetes?* Our analysis includes both type 1 and type 2 diabetes.

As the prevalence of diabetes rises, its impact strikes at the vitality of everyday life. We need to push for more education and resources. Patients should ask their employer, their doctor, and/or their local hospital how they can get support to better take control of their disease. And in turn, healthcare providers should expand lifestyle management programs, as well as education specifically targeted at diabetes and prediabetes.

– Steven Edelman, MD, Founder and Director, Taking Control of Your Diabetes (TCOYD)

A Comparison of Low & High Diabetes Prevalence Communities, 2015/2016

		10 Highest Diabetes Prevalence Communities	10 Lowest Diabetes Prevalence Communities	Percentage Point Difference
DISEASE BURDEN	Diabetes (lifetime)	16.6	7.0	9.6
	Obese (lifetime)	32.5	21.2	11.3
	High blood pressure (lifetime)	36.7	23.1	13.6
	High cholesterol (lifetime)	27.8	19.3	8.5
	Heart attack (lifetime)	5.4	2.6	2.8
	Depression (lifetime)	20.4	19.1	1.3
	Physical pain (lifetime)	28.6	23.9	4.7
HEALTH BEHAVIORS	Ate healthy all day the previous day	62.8	65.6	-2.8
	Regular exercise (30+ minutes, 3+ days per week)	50.7	60.4	-9.7
	Smoking	21.8	14.6	7.2
HEALTHCARE ACCESS	Have health insurance	84.2	90.9	-6.7
	Healthcare insecurity	20.4	13.1	7.3
	Dental visits	57.6	71.3	-13.7
PRODUCTIVITY & VITALITY	Life evaluation (% thriving)	51.1	57.4	-6.3
	Use strengths every day	66.9	69.7	-2.8
	Learn or do something interesting every day	64.4	67.3	-2.9
	Little interest or pleasure in doing things	10.8	6.9	3.9
	2+ days of poor health preventing usual activities	29.8	25.9	3.9
	Proud of community	62.9	72.9	-10.0

The Cost of Unplanned Absenteeism Among U.S. Workers with Diabetes

	Diabetes Prevalence (%)	Extra Missed Work Days Per Year (per person)	Extra Missed Work Days Per Year (all workers)	Annual Cost to U.S. Employers
Full time workers	6.3	5.5	45,131,843	$16.0 Billion
Part time workers	9.1	4.3	12,513,216	$4.4 Billion

Controlling for age, gender, race/ethnicity, income, education, marital status, children in household, region, and BMI weight class. Assumes $354 per missed work day.

The Sharecare Diabetes Solution has been a very effective service line for our health system. Having a unified team of diabetes experts working across the inpatient – outpatient spectrum provides seamless care for our patients with uncontrolled or newly diagnosed diabetes.

We know that 30% of our patients in any given year will have diabetes as a comorbid condition. The Sharecare diabetes team has implemented evidence-based nursing policies and insulin order sets that have made it simple and efficient for our nurses and doctors to keep our patients' blood glucose within appropriate range.

– Cheryl Ann Fassler, MD, FACP, Board Certified Endocrinologist
Heritage Medical Associates / Saint Thomas Health, Nashville, TN

Our diabetes team greatly values Sharecare's diabetes solutions. Being able to leverage the expertise of other Sharecare managed diabetes centers and having access to the most up-to-date educational products allows us to offer a robust program and provide participants with self-care resources to be successful and engaged for the long-term. We are proud of our 2-year follow-up completion rate of 63% versus the industry average of 20-40%.

– Rowe Hudson, RD, LD, CDE
Director, Lee Health Solutions
Lee Health System, Fort Myers, FL

Below are best practices for health systems as they implement diabetes management programs within their hospitals, across communities, and increasingly in partnership with large employers in their region. Best-in-class programs deliver professional education; provide standardized, evidence-based protocols to treat both inpatients and outpatients; empower advanced practice nurses to specialize in diabetes care; and support outpatient prevention and self-management education for those with diabetes and for those at risk of developing the disease.

Results of successful programs include clinical and quality outcomes such as reduced average length of hospital stay, lower readmission rates, lower (and controlled) blood glucose and A1C levels for patients, and reduced insulin-related medication errors. Importantly, successful diabetes management programs can be profitable service lines, providing top line revenue to the hospital, and high satisfaction scores from both patients and providers.

On the following page, we profile several innovative health systems that have successfully implemented best practices in diabetes management – for inpatient, outpatient and employer-based programs. The following are key components of successful diabetes management programs.

Focus on professional education

Education for providers should include comprehensive and state-of-the-art knowledge for diabetes management. Self-study and continuing education programs should be made available to all relevant clinical staff. Topics should be approved by the American Nurses Credentialing Center, the Commission on Dietetic Registration and other credentialing agencies.

Create standardized evidence-based protocols for inpatient care

All glycemic care and diabetes management protocols should be designed to create consistent, high-quality care compliant with the Joint Commission Inpatient Diabetes Care, the American Diabetes Association (ADA), and the American Association of Clinical Endocrinologist (AACE) Comprehensive Diabetes Management and Clinical Practice Guidelines. Fully documented and coordinated interventions, such as insulin order templates, should be evidence-based and physician reviewed. Approved order templates should be created for multiple patient types with diabetes including adults, pediatrics, pregnancy and peri-operative.

Leverage advanced practice nurses

Nurse practitioners (NPs) who are Board Certified in Advanced Diabetes Management can become diabetes care specialists. Depending on state and hospital guidelines, most NPs can drive top-line revenue by receiving reimbursement for clinical services. NPs are also able to write orders, adjust medications, and coordinate with other specialists for diabetes patients with multiple chronic conditions.

Offer outpatient self-management programs

Outpatient curriculum should be compliant with Medicare, American Diabetes Association (ADA) and/or the American Association of Diabetes Educators (AADE) self-management education and training standards. Patient-friendly education content and marketing support tools should be used to boost engagement. Disease management software should be leveraged to track patients' progress around important clinical metrics and benchmark outcomes for quality initiatives.

Saint Thomas Health, a ministry of Ascension, Nashville, TN

Saint Thomas Health has partnered with Sharecare for more than 20 years to deliver diabetes care and management to patients. Their program is now recognized by The Joint Commission's Certificate of Distinction for Inpatient Diabetes Care.

As an innovator in glycemic management, Saint Thomas Health has implemented a consistent, standardized diabetes service line along with a streamlined diabetes formulary across their three urban hospitals. Each year, 30% of their 70,000 patient admissions present with diabetes. Their unique model for inpatient care leverages nurse practitioners (NPs), all of whom are Board Certified in Advanced Diabetes Management (BC-ADM), to intensively care for those patients who enter the hospital with either uncontrolled or newly diagnosed diabetes, or who have special needs related to their condition. The NPs follow standardized, evidence-based protocols, are able to write prescriptions, make adjustments to current therapies, and bill for each patient encounter, generating revenue and improving outcomes. For those patients with diabetes who do not require a specialist, Saint Thomas has developed nursing practice policies and weight-based insulin order sets that enable physicians and nurses to provide evidence-based, best-practice care. The success of the model is in the results – more than 70% of diabetes patients never have a single blood glucose reading outside of the desired range during their hospital stay.

Hamilton Medical Center, Dalton, GA

Hamilton Medical Center's Diabetes and Nutrition Center, in partnership with Sharecare, works with J&J Industries, a self-insured textile company, to improve the health of J&J's employees by providing onsite diabetes and prediabetes education. According to the CDC, nationally only 6.8% of newly diagnosed people with type 2 diabetes receive education in the first year[1]. J&J sought to eliminate barriers associated with shift work and provide important resources onsite so employees could better manage their condition. J&J covers the cost of the program for employees and works with Hamilton Medical Center to deliver classes on location and at times convenient for employees working in all shifts.

The diabetes and prediabetes classes at J&J have an 86% attendance rate, and have resulted in participants better controlling their blood sugars, with an 8% improvement in A1C levels after three months. Over 12 months, 52% of participants completed follow-up sessions, and there was a 6% improvement in A1C, showing the program's ability to drive sustained results. Today, only 50% of employers offer any type of onsite lifestyle or behavior modification program[2], and even fewer have programs targeting diabetes and prediabetes. J&J is taking a leadership role by offering employees the knowledge and access needed to control or prevent this disease.

Lee Health Solutions, Fort Myers, FL

Lee Health Solutions has four acute care hospitals and six ADA-recognized diabetes self-management sites in the Cape Coral-Fort Myers, Florida metro area. All program participants receive 10-hours of education and a one-month follow-up call. Additionally, each receive three- and six-month telephone or in person sessions at no additional cost.

With a 97.5% outpatient satisfaction rate, patients receive outstanding care and guidance on how to achieve diabetes-related goals and improve behavioral outcomes. 86% of program participants check blood glucose as directed, 78% meet healthy eating goals, 83% are current on annual eye exams, and 90% complete daily foot exams. Diabetes management also extends to gestational diabetes, and 86% of expectant mothers with diabetes maintain healthy eating and monitor their blood glucose consistently. Over the last three months, mothers who had gestational or previously diagnosed diabetes have babies with birth weights only 1% higher than the health system's non-diabetes birth weight of 7 lbs. 6 oz.

Lee Health also established a post-acute program for high-risk patients. Diabetes readmissions of program participants are 15.5%, compared to the national average of almost 23%. High-risk patients upon discharge receive intensive follow-up and tailored education to optimize diabetes-related outcomes.

[1]https://www.cdc.gov/mmwr/preview/mmwrhtml/mm6346a2.htm
[2]http://nebgh.org/wp-content/uploads/2015/02/Diabetes-v6.pdf

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The Cost of Diabetes in the U.S.: Economic and Well-Being Impact

Methodology

These data are based on a subset of 354,473 telephone interviews with U.S. adults across all 50 states and the District of Columbia, conducted from January 2, 2015 to December 30, 2016 as part of the Gallup-Sharecare Well-Being Index. In 2015, 177,281 interviews were conducted nationally; in 2016, 177,192 were conducted nationally. The missed work analysis is based on 80,136 interviews with full or part time workers conducted Jan 2 to Oct. 15, 2017. Gallup conducts 500 telephone interviews daily, resulting in a sample that projects to an estimated 95 percent of all U.S. adults. Gallup conducts interviews in both English and Spanish. For data collected prior to September 1, 2015, each sample of national adults includes a minimum quota of 50% cellphone respondents and 50% landline respondents. For data collected between September 1, 2015 and December 30, 2016 each sample of national adults includes a minimum quota of 60% cellphone respondents and 40% landline respondents. Additional minimum quotas by time zone and within region are included in the sampling approach.

The margin of sampling error for diabetes prevalence for all U.S. adults is ±0.2 percentage points, while the margin of error for full-time workers is ±0.3 points and the rate for part-time workers is ±0.6 points. All reported margins of sampling error include computed design effects due to weighting.

The Gallup-Sharecare Well-Being Index asks: *Has a doctor or nurse ever told you that you have diabetes?*, and as such, does not specify between type 1 and type 2 diabetes. Community diabetes prevalence rates reflect the percentage of people in each community who respond "Yes" to that question. Gallup and Sharecare analyzed 189 communities in the U.S. and grouped those with the 10 lowest diabetes prevalence rates and those with the 10 highest. The average results of the two groups on a variety of well-being and health measures were then compared. Gallup and Sharecare use the U.S. Office of Management and Budget definitions of Metropolitan Statistical Areas (MSAs) to define each community. Gallup uniquely weights MSAs according to Nielsen Claritas demographic targets.

Diabetes cost analysis is drawn from research by the American Diabetes Association. A full methodology of diabetes cost analysis can be found at: http://news.gallup.com/poll/221078/diabetes-costs-economy-estimated-266b-annually.aspx

About the Gallup-Sharecare Well-Being Index™

The Gallup-Sharecare Well-Being Index is the world's largest data set on well-being, with over 2.5 million surveys fielded to date. The Well-Being Index provides unmatched, in-depth insight into the well-being of populations, is frequently cited by national media, and has been leveraged by Nobel laureates and academicians for peer-review and scholarly articles. Gallup interviews 500 people every day; the result is a sample that projects to an estimated 95% of U.S. adults.

The partnership between Gallup and Sharecare merges decades of clinical research, health care leadership and behavioral economics expertise to track and understand the key factors that drive greater well-being for individuals and populations. Previously known as the Gallup-Healthways Well-Being Index, the Gallup-Sharecare Well-Being Index™ was recently rebranded following Sharecare's 2016 acquisition of Healthways. This rebrand signifies a new and exciting union of the powerful insights generated by Gallup and meaningful health engagement fostered by Sharecare, to create a healthier world through knowledge, information and action.

About Gallup

Gallup delivers forward-thinking research, analytics, and advice to help leaders solve their most pressing problems. Combining more than 75 years of experience with its global reach, Gallup knows more about the attitudes and behaviors of the world's constituents, employees, and customers than any other organization. Gallup consultants help private and public sector organizations boost organic growth through measurement tools, strategic advice, and education.

About the Sharecare Diabetes Solution™

The Sharecare Diabetes Solution™ was founded on the principles of the Diabetes Treatment Centers of America, originally established more than 30 years ago to be the trusted partner in diabetes and glycemic management for healthcare professionals nationwide. Today, our solution builds upon that foundation by providing evidenced-based education and comprehensive coordinated care for those with diabetes and prediabetes, in both the inpatient and outpatient setting. The Sharecare Diabetes Solution enhances revenue, decreases costs, and importantly, improves both clinical and quality outcomes, while also increasing patient, provider and nurse satisfaction. Our solutions are having an impact at more than 125 health systems, physician organizations and employers around the country and touch more than 250,000 patients and their caregivers annually. For more information about the only diabetes program delivering end-to-end care, please visit http://sharecarediabetes.com.

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