

Supplementary Data

Supplementary Table 1—Summary of data sources

Data source and description	Used to estimate/analysis	+ Strengths and – limitations
Current Population Survey (CPS): 2011; available at http://www.census.gov/cps/data/	<ul style="list-style-type: none"> • annual and daily earnings by demographic • workforce participation rates for 2007 (for use in developing estimates of the net present value of productivity loss associated with premature mortality) 	<ul style="list-style-type: none"> + large sample size – file does not contain diabetes status
Behavioral Risk Factor Surveillance System (BRFSS): combined 2009–2010 surveys; available at http://www.cdc.gov/brfss/	<ul style="list-style-type: none"> • state level–diagnosed diabetes prevalence by age, sex, race/ethnicity, and insurance status 	<ul style="list-style-type: none"> + large sample size – diabetes status self-reported based on answer to the question, “Have you ever been told by a doctor that you have diabetes?” – excludes institutionalized population where diabetes is overrepresented
American Community Survey (ACS): 2010; available at http://www.census.gov/acs/www/	<ul style="list-style-type: none"> • state level–diagnosed diabetes prevalence by age, sex, race/ethnicity, and insurance status 	<ul style="list-style-type: none"> + large sample size that is representative of the population in each state – diabetes status not collected
National Health Interview Survey (NHIS): combined 2009–2011 surveys to increase sample size; available at http://www.cdc.gov/nchs/nhis.htm	<ul style="list-style-type: none"> • diagnosed diabetes prevalence by age, sex, race/ethnicity, and insurance status • prevalence of insulin and other antidiabetic agents use • impact of diabetes on employment/hours worked and missed workdays 	<ul style="list-style-type: none"> + large sample size + contains employment-related information – diabetes status self-reported based on answer to the question, “Have you EVER been told by a doctor or health professional that you have diabetes or sugar diabetes?” – excludes institutionalized population where diabetes is overrepresented
Medical Expenditure Panel Survey (MEPS): combined 2006–2010 surveys to increase sample size; available at http://meps.ahrq.gov/mepsweb/	<ul style="list-style-type: none"> • average cost per physician office, outpatient, and emergency department visit, inpatient physician services, and prescription medication • average annual expenditures for podiatry, home health, insulin, other antidiabetic agents, diabetes-related supplies, ambulance, and other medical equipment and supplies 	<ul style="list-style-type: none"> + rich source of health resource use and cost information – relatively small sample size per year – contains only 3-digit diagnosis codes; many chronic complications of diabetes require 4-digit and 5-digit codes to identify – excludes institutionalized population where diabetes is overrepresented
National Ambulatory Medical Care Survey (NAMCS): combined 2008–2010 surveys to increase sample size; available at http://www.cdc.gov/nchs/ahcd.htm	<ul style="list-style-type: none"> • national number of physician office visits by medical condition (using primary diagnosis code) • average number of prescriptions written per visit 	<ul style="list-style-type: none"> + larger sample size than MEPS + contains 5-digit diagnosis codes to identify chronic complications of diabetes – visits are the units of observations, with incomplete information on patients (including whether they have diabetes)
National Hospital Ambulatory Medical Care Survey (NHAMCS): combined 2007–2009 surveys to increase sample size; available at http://www.cdc.gov/nchs/ahcd.htm	<ul style="list-style-type: none"> • national number of hospital outpatient and emergency department visits by medical condition (using primary diagnosis code) • average number of prescriptions written per visit 	<ul style="list-style-type: none"> + same as NAMCS – same as NAMCS

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Supplementary Table 1—Continued

Data source and description	Used to estimate/analysis	+ Strengths and – limitations
Nationwide Inpatient Sample (NIS): 2010 survey; available at http://www.hcup-us.ahrq.gov/nisoverview.jsp	<ul style="list-style-type: none"> • national number of hospital inpatient days for diabetes and comorbidities of diabetes (using primary diagnosis) • cost per inpatient day calculated using hospital-specific cost-to-charge ratios 	<ul style="list-style-type: none"> + same as NAMCS – same as NAMCS
National Home and Hospice Care Survey (NHHCS): used 2007 data; available at http://www.cdc.gov/nchs/nhhcs.htm	<ul style="list-style-type: none"> • hospice care use 	<ul style="list-style-type: none"> + same as NAMCS – same as NAMCS
National Nursing Home Survey (NNHS): used 2004 data; available at http://www.cdc.gov/nchs/nnhs.htm	<ul style="list-style-type: none"> • nursing facility use 	<ul style="list-style-type: none"> + same as NAMCS – same as NAMCS
OptumInsight's Normative Health Information database (NHI): proprietary data; overview available at http://www.optuminsight.com/life-sciences/solutions/real-world-evidence/data-assets/retrospective-database/overview/	<ul style="list-style-type: none"> • calculate age/sex-specific relative rate ratios for each medical condition for hospital inpatient days, emergency department visits, and ambulatory visits (physician office and hospital outpatient combined) for population under age 65 years 	<ul style="list-style-type: none"> + large sample size + all medical records can be linked for the year to identify people with diabetes based on whether they have any diabetes diagnosis code during the year – lacks detailed data on health behavior found in MEPS
Medicare Standard Analytical Files (SAFs): available at http://www.cms.gov/Research-Statistics-Data-and-Systems/Files-for-Order/IdentifiableDataFiles/StandardAnalyticalFiles.html	<ul style="list-style-type: none"> • calculate age/sex-specific relative rate ratios for each medical condition for hospital inpatient days, emergency department visits, and ambulatory visits (physician office and hospital outpatient combined) for population over age 65 years 	<ul style="list-style-type: none"> + large sample size + all medical records can be linked for the year to identify people with diabetes based on whether they have any diabetes diagnosis code during the year + lacks detailed data on health behavior found in MEPS

Supplementary Table 2—Chronic complications of diabetes and ICD-9 diagnosis codes

Chronic complications of diabetes	ICD-9 codes
Neurological symptoms	
Myasthetic syndromes in diseases classified elsewhere (amyotrophy)	358.1
Other specified idiopathic peripheral neuropathy	356.8
Mononeuritis of upper and lower limbs	354, 355
Arthropathy associated with neurological disorders (Charcot arthropathy)	713.5
Peripheral autonomic neuropathy	337.1
Polyneuropathy in diabetes	357.2
Neuralgia, neuritis, and radiculitis, unspecified	729.2
Diabetes with neurological complications	250.6
Occlusion of cerebral arteries	434
Hemorrhagic stroke	430–432
Late effects of cerebrovascular disease	438
Occlusion of stenosis of precerebral arteries	433
Other and ill-defined cerebrovascular disease	437
Acute, but ill-defined, cerebrovascular disease	436
TIAs	435
Peripheral vascular disease	
Atherosclerosis	440
Embolism and thrombosis, structure of artery	444, 447.1
Other peripheral vascular disease	443
Other disorders of circulatory system	459
Phlebitis and thrombophlebitis, portal vein thrombosis, thrombolism, and venous thrombolism	451, 452
Other venous embolism and thrombolism	453
Varicose veins of lower extremities	454
Gangrene and amputations	785.4, 885–887, 895–897
Chronic ulcer of skin	707
Cardiovascular disease	
Aortic and other aneurysms	441, 442
Hypotension	458
Angina	413
Conduction disorders and cardiac dysrhythmias	426–427
Arteriosclerotic cardiovascular disease	429.2
Cardiomegaly	429.3
Cardiomyopathy	425
Other acute and subacute forms of ischemic heart disease	411
Heart failure	428
Diabetes with peripheral circulatory disorders	250.7
Myocardial degeneration	429.1
Myocardial infarction	410, 412
Other chronic ischemic heart disease	414
Hypertension	401–405
Renal complications	
Infections of kidney	590
Other disorders of bladder	596
Cystitis	595
Renal sclerosis, unspecified	587
Glomerulonephritis, nephrotic syndrome, nephritis, and nephropathy	580–583
Proteinuria	791.0
Renal failure and its sequelae	584, 586, 588
Other disorders of kidney and ureter	593
Urinary tract infection	599.0
Diabetes and renal complications	250.4
Chronic renal failure (ESRD)	585
Endocrine/metabolic complications	
Dwarfism-obesity syndrome	259.4
Glycogenosis and galactosemia	271.0, 271.1

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Supplementary Table 2—Continued

Chronic complications of diabetes	ICD-9 codes
Disorders of iron metabolism	275.0
Hypercholesterolemia	272.0
Hyperchylomicronemia	272.3
Hyperkalemia	276.7
Hypertriglyceridemia	272.1
Macroglobulinemia	273.3
Lancereaux disease	261
Lipidoses	272.7
Other specified endocrine disorders	259.8
Other and unspecified hyperlipidemia	272.4
Mixed hyperlipidemia	272.2
Renal glycosuria	271.4
Ophthalmic complications	
Other retinal disorders	362
Vascular disorders of the iris and ciliary body	364.0, 364.4
Disorders of the optic nerve and visual pathways	377
Diabetes with ophthalmic complications	250.5
Cataract	366
Glaucoma	365
Visual disturbance, low vision, blindness	368–369
Other complications	
Bacteremia, bacterial infection	079.2, 790.7
Candidiasis of skin and nails	112.3
Chronic osteomyelitis of the foot	730.17
Other and unspecified noninfectious gastroenteritis and colitis	558.9
Impotence of organic origin	607.84
Infective otitis externa	380.1
Degenerative skin disorders	709.3
Candidiasis of vulva and vagina	112.1
Cellulitis	681, 682
Diabetes with other specified manifestations	250.8
Diabetes with unspecified complication	250.9
Other bone involvement in disease classified elsewhere	731.8

ESRD, end-stage renal disease; TIAs, transient ischemic attacks.

Supplementary Table 3—U.S. population and percent of U.S. population with diabetes, 2012 (in thousands)

	Total U.S. population	With diagnosed diabetes	
Total population*	316,300	22,300	7.0%
Adult population†	240,000	22,200	9.3%
Race/ethnicity			
Non-Hispanic white	201,800	14,100	7.0%
Non-Hispanic black	38,800	3,400	8.9%
Non-Hispanic other	22,900	1,400	6.0%
Hispanic	52,800	3,400	6.5%
Sex			
Male	155,800	11,300	7.3%
Female	160,500	11,000	6.8%
Age (years)			
<18	76,100	200	0.2%
18–34	74,100	1,100	1.5%
35–44	41,000	2,000	5.0%

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Supplementary Table 3—Continued

	Total U.S. population	With diagnosed diabetes	
45–54	44,300	4,100	9.2%
55–59	20,500	3,000	14.7%
60–64	17,600	3,100	17.7%
65–69	13,600	2,800	20.2%
70+	28,900	6,100	20.9%
Insurance			
Private	177,400	8,200	4.6%
Government‡	92,700	12,400	13.4%
Uninsured	46,200	1,700	3.7%

Data sources: NHIS (2009–2011), NNHS (2004), and the U.S. Census Bureau (2012). *Numbers do not necessarily sum to totals because of rounding. †Age 18 years and older. ‡Includes Medicare, Medicaid, Children’s Health Insurance Program, and Indian Health Service.

Supplementary Table 4—Average cost per medical event (visit or day) by medical condition and type of service, 2012 (in actual dollars)

Medical event	Chronic complications*								General medical‡	Average
	Diabetes	Neurological	Peripheral vascular	Cardio-vascular	Renal	Metabolic	Ophthalmic	Other†		
Hospital inpatient days	2,359	2,881	2,898	3,741	2,238	2,496	2,569	2,212	2,752	2,876
Hospital outpatient visits	362	738	1,630	508	611	367	1,109	648	899	643
Emergency visits	795	771	903	1,077	764	1,385	739	634	937	914
Physician office visits	147	199	312	171	263	146	229	196	180	178

Data sources: NIS (2010), NAMCS (2008–2010), NHAMCS (2007–2009), and MEPS (2006–2010). *See Supplementary Table 2 for diagnosis codes for each category of complications. †Includes bacteremia, candidiasis of skin and nails, chronic osteomyelitis of the foot, other and unspecified noninfectious gastroenteritis and colitis, impotence of organic origin, infective otitis externa, degenerative skin disorders, candidiasis of vulva and vagina, cellulitis, diabetes with other specified manifestations, diabetes with unspecified complication, and other bone involvement in disease classified elsewhere. ‡Includes all other health care use that is not a known comorbidity of diabetes.

Supplementary Table 5 shows that per capita health service use is similar for both sexes except for nursing home or residential facility care where the average length of stay is more than double for females than for males. Across the four race/ethnicity groups, non-Hispanic whites are shown to have the highest per capita use of nursing home care, physician office care, and prescription medications. On the other hand, non-Hispanic blacks have the highest use of hospital inpatient, emergency department, and hospital outpatient care.

Supplementary Table 5—Per capita health service use attributed to diabetes by sex, race/ethnicity, and type of service, 2012 (in actual units)

Type of service	Sex		Race/ethnicity				U.S. total (N = 22.3 M)
	Male (n = 11.3 M)	Female (n = 11.0 M)	NHW (n = 14.1 M)	NHB (n = 3.4 M)	NHO (n = 1.4 M)	Hispanic (n = 3.4 M)	
Institutional care							
Hospital inpatient days	1.12	1.25	1.15	1.67	1.09	0.86	1.18
Nursing home/residential facility days	2.77	6.38	5.45	5.00	1.71	1.52	4.55
Hospice days	0.01	0.01	0.01	0.01	0.01	0.01	0.01
Outpatient care							
Physician office visits	3.92	3.77	4.19	3.30	3.24	3.22	3.85
Emergency visits	0.29	0.36	0.29	0.58	0.19	0.28	0.33
Hospital outpatient visits	0.31	0.39	0.29	0.65	0.24	0.35	0.35
Home health visits	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Prescription medications	16.02	16.42	17.69	15.88	11.66	12.33	16.22

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010), NHHCS (2007), and the U.S. Census Bureau (2012). NHB, non-Hispanic black; NHO, non-Hispanic other; NHW, non-Hispanic white.

Scientific Statement

Supplementary Table 6 shows that females have slightly higher health care expenditures attributed to diabetes in comparison with males, despite a slightly smaller population. Across the four race/ethnicity groups, the non-Hispanic

whites with diabetes group has the highest expenditure driven by its much larger population compared with the other race/ethnicity groups. However, non-Hispanic blacks have the highest per capita cost attributed to diabetes. This is

driven by this group's higher use of hospital inpatient, emergency department, and hospital outpatient care than other race/ethnicity groups as shown in Supplementary Table 5.

Supplementary Table 6—Health care expenditure attributed to diabetes by sex, race/ethnicity, and type of service, 2012 (in millions of dollars)

Type of service	Sex		Race/ethnicity				Total (N = 22.3 M)
	Male (n = 11.3 M)	Female (n = 11.0 M)	NHW (n = 14.1 M)	NHB (n = 3.4 M)	NHO (n = 1.4 M)	Hispanic (n = 3.4 M)	
Institutional care							
Hospital inpatient	37,010	38,862	47,042	16,028	4,387	8,416	75,872
Nursing home	4,595	10,153	11,147	2,502	344	755	14,748
Hospice	12	20	20	6	1	5	32
Outpatient care							
Physician office	7,927	7,294	10,549	1,995	778	1,898	15,221
Emergency department	3,055	3,600	3,732	1,786	250	886	6,654
Ambulance services	111	107	137	34	13	33	218
Hospital outpatient	2,372	2,655	2,637	1,416	212	762	5,027
Home health	2,269	2,197	2,815	688	277	686	4,466
Podiatry	108	104	134	33	13	33	212
Outpatient medication and supplies							
Insulin	3,166	2,991	3,819	1,186	270	882	6,157
Diabetic supplies	1,108	1,188	1,760	277	84	176	2,296
Other antidiabetic agents*	6,272	5,864	7,555	1,871	814	1,897	12,137
Prescription medications	15,917	15,799	21,812	4,786	1,413	3,705	31,716
Other equipment and supplies†	540	523	670	164	66	163	1,063
Total health care costs	84,462	91,357	113,829	32,771	8,922	20,298	175,819
Total per capita health care costs‡	7,458	8,331	8,101	9,540	6,459	5,930	7,888

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010), NHHCS (2007), and the U.S. Census Bureau (2012). NHB, non-Hispanic black; NHO, non-Hispanic other; NHW, non-Hispanic white. *Includes antidiabetic agents such as exenatide and pramlintide. †Includes but not limited to eyewear, orthopedic items, hearing devices, prosthesis, bathroom aids, medical equipment, and disposable supplies. ‡In actual dollars.

Supplementary Table 7—Annual productivity loss per person with diabetes by cause and race/ethnicity, 2012 (in millions of dollars)

	Race/ethnicity			
	NHW (n = 14.1 M)	NHB (n = 3.4 M)	NHO (n = 1.4 M)	Hispanic (n = 3.4 M)
Absenteeism	3,448	624	299	636
Presenteeism	14,730	2,446	1,262	2,404
Reduced productivity due to not being				
in the labor force	1,655	497	175	414
Unemployment from disability	11,233	6,001	1,371	2,989
Premature mortality	13,265	3,207	660	1,330
Total annual indirect cost	44,331	12,775	3,767	7,772
Total per capita indirect cost*	3,155	3,719	2,727	2,271

Data sources: analysis of the NHIS (2009–2011), CPS (2011), CDC mortality data, and the U.S. Census Bureau population estimates for 2010 and 2012. *In actual dollars. NHB, non-Hispanic black; NHO, non-Hispanic other; NHW, non-Hispanic white.

Supplementary Table 8—Proportion of total health resource use attributed to diabetes in the U.S. by medical condition and type of service, 2012

Medical event	Chronic complications*									Average
	Diabetes	Neurological	Peripheral vascular	Cardiovascular	Renal	Metabolic	Ophthalmic	Other†	General medical‡	
Hospital inpatient days	100%	31%	36%	35%	33%	41%	21%	44%	11%	16%
Hospital outpatient visits	100%	23%	23%	17%	24%	8%	23%	13%	3%	8%
Emergency department visits	100%	23%	19%	23%	14%	44%	17%	8%	4%	6%
Physician office visits	100%	26%	28%	19%	19%	8%	27%	19%	3%	8%
Prescription medications	100%	30%	25%	18%	29%	8%	25%	16%	4%	12%

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010), NHHCS (2007), NHIS (2009–2011), and the U.S. Census Bureau (2012). *See Supplementary Table 2 for diagnosis codes for each category of complications. †Includes bacteremia, candidiasis of skin and nails, chronic osteomyelitis of the foot, other and unspecified noninfectious gastroenteritis and colitis, impotence of organic origin, infective otitis externa, degenerative skin disorders, candidiasis of vulva and vagina, cellulitis, diabetes with other specified manifestations, diabetes with unspecified complication, and other bone involvement in disease classified elsewhere. ‡Includes all other health care use that is not a known comorbidity of diabetes.

ESTIMATING THE DIRECT MEDICAL COST ATTRIBUTED TO DIABETES BY INSURANCE STATUS

In addition to estimating direct medical cost by age-group, sex, and race/ethnicity, we also estimate health resource use and medical expenditures by three insurance status groups (private; government including Medicare, Medicaid, Children's Health Insurance Program, and other government-sponsored coverage; and uninsured). Descriptions of the data sources and overall methods can be found in "Estimating the direct medical cost attributed to diabetes" in the RESEARCH DESIGN AND METHODS section of the article.

In estimating insurance-specific medical expenditures, we use methods that are consistent with the main analysis where the attributed risk methodology is used for the larger cost components including hospital inpatient, emergency department, physician office, hospital

outpatient, and prescription medication (excluding insulin and other antidiabetic agents). Specifically, medical expenditures attributed to diabetes for each of these types of services are estimated by combining medical condition/age/sex/setting-specific etiologic fractions, medical condition/age/sex/setting/insurance status-specific health resource use, and medical condition/setting/payer-specific average medical cost per event (visit or day). Medical expenditures for insulin and other antidiabetic agents by age-group, sex, race/ethnicity, and insurance status are estimated by combining diabetes prevalence, rate of use specific to age, sex, race/ethnicity, and insurance status obtained from the 2009–2011 NHIS, and average cost per prescription.

For the smaller cost components, including nursing home care, ambulance services, home health, hospice, podiatry, diabetic supplies, and other equipment and supplies, the attributed risk meth-

odology is not used due to data limitations. Instead, average age/sex/race-specific (or age/sex-specific when sample size does not permit age/sex/race-specific estimates) utilization and cost are applied to the population with diabetes by insurance status to estimate expenditures due to diabetes for each type of insurance coverage.

Supplementary Table 9 shows that utilization of hospital inpatient days, hospital outpatient visits, and prescription medications is higher among those that are insured by government programs, especially for inpatient care. Per capita use of physician office visits for those privately insured is higher than those insured by government programs and those that are uninsured. Emergency department visits is the only type of service where per capita use is higher among the uninsured group compared with the privately insured and those insured by government programs.

Supplementary Table 9—Per capita health service use attributed to diabetes by insurance status and type of service, 2012 (in actual units)

Type of service	Insurance status			Total (N = 22.3 M)
	Private (n = 8.2 M)	Government (n = 12.4 M)	Uninsured (n = 1.7 M)	
Hospital inpatient days	0.70	1.61	0.44	1.18
Physician office visits	4.20	4.03	0.90	3.85
Emergency department visits	0.27	0.35	0.42	0.33
Hospital outpatient visits	0.27	0.41	0.35	0.35
Antidiabetic agents	5.77	4.60	2.27	4.85
Other prescription medications	15.41	18.38	4.58	16.22

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010), NHHCS (2007), and the U.S. Census Bureau (2012).

Supplementary Table 10 shows that the majority of the medical expenditures attributed to diabetes are for treating people who are insured by government programs, followed by those who are privately insured. Per capita expenditure attributed to diabetes for those in gov-

ernment insurance programs is about 13% higher than the average across all insurance statuses. This is mainly because about 69% of the population with diabetes that is covered by government insurance is age 65 years and older, a majority of whom are likely to be covered

by Medicare (The Henry J. Kaiser Family Foundation. KFF State Health Facts: Distribution of Medicare Beneficiaries by Age, 2010. Available from <http://www.statehealthfacts.org/comparetable.jsp?ind=292&cat=6>. Accessed 16 January 2013).

Supplementary Table 10—Health care expenditure attributed to diabetes by insurance status and type of service, 2012 (in millions of dollars)

Type of service	Insurance status			Total (N = 22.3 M)
	Private (n = 8.2 M)	Government (n = 12.4 M)	Uninsured (n = 1.7 M)	
Institutional care				
Hospital inpatient days	20,238	53,636	1,998	75,872
Nursing home days	5,401	8,194	1,153	14,748
Hospice	12	18	3	32
Outpatient care				
Physician office	6,632	8,441	149	15,221
Emergency department	2,941	3,194	519	6,654
Ambulance services	80	121	17	218
Hospital outpatient	2,143	2,739	145	5,027
Home health	1,635	2,481	349	4,466
Podiatry	78	118	17	212
Outpatient medication and supplies				
Insulin	2,213	3,554	390	6,157
Diabetic supplies	841	1,276	179	2,296
Other antidiabetic agents*	4,510	7,151	476	12,137
Prescription medications	13,342	18,178	196	31,716
Other equipment and supplies†	389	591	83	1,063
Total health care costs	60,455	109,692	5,674	175,819
Total per capita health care costs‡	7,406	8,857	3,257	7,888

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010), NHHCS (2007), NHIS (2009–2011), and the U.S. Census Bureau (2012). *Includes antidiabetic agents such as exenatide and pramlintide. †Includes but not limited to eyewear, orthopedic items, hearing devices, prosthesis, bathroom aids, medical equipment, and disposable supplies. ‡In actual dollars.

ESTIMATING THE DIRECT AND INDIRECT COSTS ATTRIBUTED TO DIABETES BY STATE

—State-specific cost of diabetes was calculated by combining the population with diabetes in each state by age/sex/race and ethnicity stratum with the overall U.S. per capita expenditure attributed to diabetes by each aforementioned stratum. State-specific diabetes prevalence is estimated by applying a statistical matching procedure to match each person in the 2010 ACS with a person in the 2009 or 2010 BRFSS or an institutionalized person in the 2004 NNHS. See “Estimating the size of the population with diabetes” in the RESEARCH DESIGN AND METHODS section of the article for overall methods in estimating prevalence.

Per capita medical cost attributed to diabetes include age/sex/race and ethnicity–

specific health care expenditures for hospital inpatient, nursing home, physician office visits, emergency department visits, ambulance services, hospital outpatient visits, home health, hospice, podiatry, insulin, diabetic supplies, other antidiabetic agents, prescription medications, and other equipment and supplies. The per capita medical cost is combined with diabetes prevalence in each state and the District of Columbia to estimate state-specific medical cost attributed to diabetes. This cost is further adjusted by the state-specific health care cost-of-living index published by Missouri Economic Research and Information Center (MERIC) for the second quarter of 2012. See “Estimating the direct medical cost attributed to diabetes” in the RESEARCH DESIGN AND METHODS section of the article for overall methods in estimating medical cost attributed to diabetes.

Per capita indirect cost attributed to diabetes includes costs due to absenteeism, presenteeism, reduced productivity for those not in labor force, unemployment from disability, and premature mortality. Similar to the methodology employed to estimate state-specific medical costs, per capita indirect cost and diabetes prevalence for each state are combined to estimate state-specific indirect costs owing to loss of productivity due to diabetes. Indirect cost was adjusted by overall cost-of-living index published by MERIC for the second quarter of 2012. See “Estimating the indirect cost attributed to diabetes” in the RESEARCH DESIGN AND METHODS section of the article for overall methods in estimating indirect cost attributed to diabetes.

As shown in Supplementary Table 11, the 10 largest states in terms of population with diabetes (California, Florida,

Texas, New York, Pennsylvania, Ohio, Illinois, North Carolina, Michigan, and New Jersey) are also collectively responsible for over 60% of the national cost of diabetes. Although, its prevalence (6.4%) is

among the bottom 50%, California has the largest population with diabetes and thus incurs the largest cost (\$27.6 billion, 11% of the total) due to diabetes. In contrast, West Virginia has the highest

prevalence of diabetes (10.2%), but due to the small size of its population, the cost attributed to diabetes is less than one-tenth the cost incurred by California.

Supplementary Table 11—State level prevalence and cost burden of diabetes

State	Prevalence	Population with diabetes	Costs (billions \$)		
			Medical	Indirect	Total
California	6.40%	2,435,600	19.32	8.23	27.55
Florida	8.90%	1,741,300	14.37	4.53	18.90
Texas	7.30%	1,919,500	13.35	4.89	18.24
New York	6.80%	1,321,800	11.38	5.06	16.43
Pennsylvania	7.40%	954,500	7.43	2.81	10.24
Ohio	7.60%	880,300	6.71	2.57	9.28
Illinois	6.40%	836,000	6.59	2.39	8.98
North Carolina	7.60%	748,300	6.10	2.20	8.30
Michigan	7.50%	750,900	5.76	2.24	8.00
New Jersey	7.00%	625,200	5.42	2.43	7.85
Georgia	7.20%	717,200	5.47	2.16	7.63
Virginia	6.80%	564,200	4.43	1.77	6.19
Massachusetts	6.80%	448,600	4.34	1.72	6.07
Indiana	7.30%	483,000	3.69	1.43	5.12
Washington	6.30%	437,500	3.75	1.36	5.11
Tennessee	7.80%	504,000	3.62	1.48	5.10
Maryland	7.00%	412,700	3.45	1.63	5.07
Arizona	7.00%	470,200	3.48	1.28	4.76
Missouri	6.90%	419,100	3.24	1.24	4.49
Wisconsin	6.40%	367,300	3.28	1.09	4.36
Alabama	8.80%	425,000	3.01	1.30	4.31
Louisiana	8.30%	379,800	3.02	1.18	4.19
South Carolina	7.80%	371,200	3.02	1.13	4.16
Kentucky	8.70%	382,100	2.66	1.19	3.85
Minnesota	5.10%	276,900	2.30	0.84	3.14
Oregon	6.30%	248,200	2.16	0.84	2.99
Connecticut	6.00%	216,600	2.09	0.83	2.92
Oklahoma	7.50%	284,900	2.07	0.77	2.84
Mississippi	8.80%	263,400	1.91	0.82	2.74
Colorado	4.60%	239,700	1.83	0.69	2.52
Arkansas	8.10%	241,000	1.67	0.72	2.39
West Virginia*	10.20%	190,700	1.44	0.57	2.01
Kansas	6.80%	197,900	1.42	0.56	1.98
Iowa	6.00%	185,100	1.39	0.53	1.92
Nevada	6.20%	177,800	1.36	0.47	1.82
New Mexico	7.70%	161,700	1.16	0.37	1.53
Maine	7.50%	100,700	0.88	0.36	1.24
Utah	4.40%	125,200	0.86	0.33	1.19
Hawaii	6.10%	85,100	0.77	0.34	1.11
Nebraska	6.00%	111,600	0.79	0.32	1.11
New Hampshire	6.00%	81,300	0.69	0.31	1.00
Idaho	6.10%	99,300	0.72	0.27	0.99
Delaware	8.10%	74,400	0.60	0.26	0.86
Rhode Island	6.20%	65,800	0.57	0.25	0.82
Montana	4.90%	49,700	0.42	0.14	0.56
South Dakota	6.30%	51,900	0.42	0.14	0.56
Alaska	4.20%	30,500	0.32	0.13	0.45
District of Columbia	5.30%	31,900	0.31	0.14	0.44

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Supplementary Table 11—Continued

State	Prevalence	Population with diabetes	Costs (billions \$)		
			Medical	Indirect	Total
North Dakota	5.60%	38,000	0.29	0.12	0.41
Vermont	4.90%	31,100	0.26	0.11	0.37
Wyoming†	6.10%	34,900	0.26	0.10	0.36
U.S. total	7.00%	22,290,200	175.8	68.6	245

Data sources: NIS (2010), NNHS (2004), NAMCS (2008–2010), NHAMCS (2007–2009), MEPS (2006–2010 or 2008–2010), NHHCS (2007), NHIS (2009–2011), BRFSS (2009–2010), ACS (2010), and the U.S. Census Bureau (2012). Note: Prevalence estimates reflect combined rates for a noninstitutionalized population from the 2010 BRFSS, the population in nursing homes as estimated using the 2004 NNHS, and calibrated to the state level using the 2010 ACS and U.S. Census Bureau population estimates for 2012. Numbers do not necessarily sum to totals because of rounding. *Cost-of-living index unavailable so average of neighboring states (Ohio and Pennsylvania) was used. †Cost-of-living index unavailable so average of neighboring states (Idaho, Montana, and Utah) was used.