



CHRONIC DISEASE BURDEN UPDATE

■ This update takes a look at the recently released Version 2 of the Chronic Disease Cost Calculator, a tool for states that estimates the financial burden of chronic disease.

Chronic diseases require funding, resources, and planning to combat and prevent. One challenge is the ability to quantify the amount of money spent on each disease. The U.S. Centers for Disease Control and Prevention (CDC) and RTI International have developed Version 2 of the Chronic Disease Cost Calculator that provides a tool to estimate the financial burden of chronic disease.

Information from the Chronic Disease Cost Calculator can be used to assess the scope and impact of chronic disease and to make decisions to address it. This information can be applied when making decisions regarding disease prevention and control, allocation of resources, public health actions and program planning.

AN EXAMPLE: DIABETES

Calculations from the Chronic Disease Cost Calculator were applied to determine estimated costs of diabetes in Illinois. In 2010, according to the cost calculator, the average cost of treating a person to receive care for diabetes within the past year in Illinois was \$6,490. A total of 5\$ billion was spent on treating diabetes in Illinois. Almost half of people in Illinois who have received care for diabetes in the past year are employed and miss an average of two days of work due to diabetes, for a total of 743,000 missed days of work and \$183 million in lost productivity and wages. The cost calculator estimates there will be a 60.3 percent increase in medical costs, excluding absenteeism, in Illinois in 2020.

CHRONIC DISEASE COST CALCULATOR

Version 2 of the Chronic Disease Cost Calculator estimates state-level annual medical expenditures and absenteeism for chronic conditions, including arthritis; asthma; cancer; cardiovascular diseases (congestive heart failure, coronary heart disease, hypertension, stroke, and other heart diseases); depression; and diabetes. Hypertension and diabetes are diseases that also cause other diseases included in the cost calculator.

The cost calculator provides the size of the general population, percent of the population who have received care for a chronic condition within the past year (treated population), size of the treated population, cost per person in the treated population and total costs. The table on the next page shows the costs to payers for select chronic diseases in Illinois and the U.S. Total costs are reported in millions.

Chronic disease costs are based on estimations of allocation of medical resources and should not be regarded as exact costs. Estimations are intended to be the most accurate method of determining the cost of the chronic disease, but there are many limitations to these values.

Chronic Disease Cost to All Payers (Illinois and U.S.)

All Payers		Population	% Treated	Treated Population	Cost per person	*Total costs
Arthritis	U.S. overall	304,059,724	14.80%	4,5065,100	\$2,690	\$121,370
	Ill. overall	12,901,563	15.20%	1,966,500	\$2,740	\$5,392
Asthma	U.S. overall	304,059,724	4.90%	14,757,200	\$2,090	\$30,825
	Ill. overall	12,901,563	4.80%	622,900	\$2,130	\$1,328
Cancer	U.S. overall	304,059,724	4.20%	12,634,600	\$11,140	\$140,789
	Ill. overall	12,901,563	3.70%	482,500	\$11,360	\$5,482
Congestive Heart Failure	U.S. overall	304,059,724	0.70%	2,056,900	\$9,440	\$19,415
	Ill. overall	12,901,563	0.80%	99,800	\$9,580	\$956
Coronary Heart Disease	U.S. overall	304,059,724	4.40%	13,372,900	\$7,690	\$102,855
	Ill. overall	12,901,563	4.90%	631,400	\$7,900	\$4,989
Hypertension	U.S. overall	304,059,724	18.00%	54,631,900	\$2,130	\$116,501
	Ill. overall	12,901,563	17.10%	2,211,100	\$2,200	\$4,864
Stroke	U.S. overall	304,059,724	1.30%	3,910,600	\$16,600	\$64,924
	Ill. overall	12,901,563	1.30%	163,200	\$17,100	\$2,792
Other Heart Disease	U.S. overall	304,059,724	2.50%	7,730,200	\$7,050	\$54,503
	Ill. overall	12,901,563	2.40%	306,200	\$7,230	\$2,213
Depression	U.S. overall	304,059,724	6.10%	18,657,000	\$3,540	\$66,130
	Ill. overall	12,901,563	6.80%	875,700	\$3,470	\$3,039
Diabetes	U.S. overall	304,059,724	6.70%	20,311,500	\$6,320	\$128,352
	Ill. overall	12,901,563	6.00%	774,600	\$6,490	\$5,029

Source: U.S. Centers for Disease Control and Prevention Chronic Disease Cost Calculator Version 2

*Total costs reported in millions. Includes costs only for diseases selected and have cost values available

PAYERS AND ABSENTEEISM

Expenditures are provided for the state population as breakout amounts for Medicaid, Medicare, private insurers and all payers combined. Along with medical expenditures related to chronic disease is the expense of absenteeism in the workplace. The loss in productivity that results from people not being able to work due to a chronic disease is costly.

Absenteeism expenditures include costs, number of work days missed, and the average number of days a person in the treated population misses. Absenteeism is valuable in decision making as it can give a perspective on the expenses of a chronic disease. The first table on the next page shows the costs for chronic diseases to Medicaid, Medicare, private insurers and all payers combined in Illinois. The costs are reported in millions.

Illinois Cost of Chronic Diseases to Payers

	*All Payers	*Medicaid	*Medicare	*Private Insurers	*Absenteeism	*All Payers and Absenteeism
Arthritis	\$5,392	\$285	\$1,440	\$2,160	\$721	\$6,113
Asthma	\$1,328	\$387	\$272	\$455	\$150	\$1,478
Cancer	\$5,482	\$251	\$1,706	\$2,412	\$311	\$5,793
Congestive Heart Failure	\$956	\$158	\$354	\$160	\$12	\$968
Coronary Heart Disease	\$4,989	\$158	\$1,589	\$2,077	\$237	\$5,226
Hypertension	\$4,864	\$420	\$1,122	\$1,694	\$235	\$5,099
Stroke	\$2,792	\$324	\$875	\$581	\$189	\$2,981
Other Heart Disease	\$2,213	\$327	\$829	\$577	\$35	\$2,249
Depression	\$3,039	\$231	\$581	\$1,271	\$351	\$3,390
Diabetes	\$5,029	\$499	\$1,375	\$1,579	\$183	\$5,212
Diseases of the Heart	\$8,159	\$643	\$2,772	\$2,814	\$284	\$8,443
Total Cardiovascular Disease	\$14,148	\$1,138	\$4,232	\$4,692	\$670	\$14,818

Source: U.S. Centers for Disease Control and Prevention Chronic Disease Cost Calculator Version 2

*Costs reported in millions. Includes costs only for diseases selected and have cost values available

The table below shows the number and percent of the treated population that is employed, average days of work a person in the treated population misses due to chronic disease, total number of days missed by the treated population, average daily wage and total cost of absenteeism in Illinois due to chronic disease.

Illinois Absenteeism Due to Chronic Disease

	% Employed	Employed Treated Pop.	Missed Days/ Employed Person	Total Missed Days	Daily Wage	*Total Absenteeism
Arthritis	53.80%	1,057,200	2.9	3,098,000	\$233	\$721
Asthma	62.60%	389,800	2.1	800,000	\$188	\$150
Cancer	44.10%	213,000	6.2	1,328,000	\$234	\$311
Congestive Heart Failure	9.10%	9,100	5.3	49,000	\$241	\$12
Coronary Heart Disease	32.20%	203,300	4.3	880,000	\$269	\$237
Hypertension	48.90%	1,081,300	0.9	939,000	\$251	\$235
Stroke	19.40%	31,600	23.5	743,000	\$255	\$189
Other Heart Disease	31.40%	96,100	1.5	148,000	\$238	\$35
Depression	59.10%	517,300	3.2	1,664,000	\$211	\$351
Diabetes	47.20%	365,400	2	743,000	\$246	\$183

Source: U.S. Centers for Disease Control and Prevention Chronic Disease Cost Calculator Version 2

*Costs reported in millions. Includes costs only for diseases selected and have cost values available

MEDICAL COST PROJECTIONS

Medical cost projections can be used to consider potential costs of a chronic disease in future years. They are based on past expenditure increases and demographic changes. Data is available for every year from 2010

ILLINOIS CHRONIC DISEASE BURDEN UPDATE

through 2020. The Chronic Disease Cost Calculator was used to generate estimates for Illinois for chronic diseases. The bottom row shows percent increase in cost from 2010. The costs are reported in millions.

Illinois Cost Projections for Select Chronic Diseases

Year	*Arthritis	*Asthma	*Cancer	*Depression	*Diabetes
2010	\$5,863	\$1,436	\$5,969	\$3,292	\$5,475
2011	\$6,120	\$1,496	\$6,241	\$3,432	\$5,721
2012	\$6,412	\$1,563	\$6,568	\$3,584	\$6,007
2013	\$6,712	\$1,633	\$6,903	\$3,741	\$6,300
2014	\$7,023	\$1,705	\$7,250	\$3,904	\$6,605
2015	\$7,358	\$1,781	\$7,627	\$4,077	\$6,934
2016	\$7,700	\$1,859	\$8,013	\$4,254	\$7,271
2017	\$8,054	\$1,941	\$8,417	\$4,436	\$7,621
2018	\$8,423	\$2,025	\$8,841	\$4,625	\$7,986
2019	\$8,807	\$2,113	\$9,286	\$4,822	\$8,367
2020	\$9,220	\$2,206	\$9,771	\$5,030	\$8,779
% Increase					
2010-2020	57.30%	53.60%	63.70%	52.80%	60.30%

Source: U.S. Centers for Disease Control and Prevention Chronic Disease Cost Calculator Version 2

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Illinois Cost Projections for Cardiovascular Diseases

*Year	*Congestive Heart Failure	*Coronary Heart Disease	*Hypertension	*Stroke	*Other Heart Disease	*Diseases of the Heart	*Cardiovascular Disease
2010	\$1,050	\$5,449	\$5,310	\$3,062	\$2,416	\$8,915	\$15,460
2011	\$1,097	\$5,695	\$5,546	\$3,200	\$2,526	\$9,318	\$16,155
2012	\$1,153	\$5,985	\$5,813	\$3,360	\$2,657	\$9,795	\$16,969
2013	\$1,210	\$6,282	\$6,087	\$3,524	\$2,791	\$10,282	\$17,801
2014	\$1,268	\$6,589	\$6,371	\$3,694	\$2,930	\$10,787	\$18,664
2015	\$1,333	\$6,924	\$6,681	\$3,881	\$3,082	\$11,339	\$19,607
2016	\$1,400	\$7,267	\$6,999	\$4,074	\$3,237	\$11,905	\$20,573
2017	\$1,470	\$7,625	\$7,328	\$4,275	\$3,400	\$12,496	\$21,581
2018	\$1,545	\$8,003	\$7,673	\$4,492	\$3,572	\$13,121	\$22,648
2019	\$1,625	\$8,400	\$8,035	\$4,720	\$3,754	\$13,779	\$23,769
2020	\$1,712	\$8,831	\$8,425	\$4,969	\$3,951	\$14,494	\$24,985
% Increase							
2010-2020	63.20%	62.10%	58.70%	62.30%	63.50%	62.60%	61.60%

Source: U.S. Centers for Disease Control and Prevention Chronic Disease Cost Calculator Version 2

*Costs reported in millions. Includes costs only for diseases selected and have cost values available

There are limitations to the medical cost projections. Changes in technology, resources, and policies will alter trends in health care and related costs. Future changes to the health care system, lost productivity and other indirect costs of disease are not figured into these projections.

Use of the Chronic Disease Cost Calculator is not restricted and can be downloaded to a computer that meets system requirements. Visit <http://www.cdc.gov/chronicdisease/resources/calculator/download.htm> to download Version 2 of the Chronic Disease Cost Calculator.