



The chart below presents data on the prevalence, impact and treatment of HIV infection with parallel data on chronic diseases such as cardiovascular disease, diabetes, and Hepatitis C. This chart allows for the comparison of HIV to other chronic diseases that are common in high-income countries and that require lifelong clinical management. This data is not intended to diminish the personal and societal consequences of HIV infection, but to draw awareness to the equal or greater toll of other chronic diseases.

HIV and Chronic Disease in the United States

Disease	Prevalence	Social and Economic Burden of Disease ¹	Treatment	Disease Progression
HIV	<ul style="list-style-type: none"> 0.6%² 	<ul style="list-style-type: none"> In 2002, annual direct and indirect costs of new HIV infections in the United States were estimated to total \$36.4 billion³ 	<ul style="list-style-type: none"> There is no cure for HIV infection⁴ HAART can suppress the virus, slow disease progression, and prolong life⁵ Adherence to HAART can decrease viral load and lower viral transmissibility⁶ 	<ul style="list-style-type: none"> Untreated HIV infection will almost inevitably lead to illness and premature death⁷ HIV targets the immune system – it can begin degrading the immune system within weeks of infection, though some individuals do not experience symptoms for years⁸ Average life expectancy in the United States after diagnosis is 22.5 years⁹ HIV infection can increase vulnerability to cardiovascular disease, kidney disease, liver disease, and cancer¹⁰
Hepatitis C	<ul style="list-style-type: none"> 1.5% (overall prevalence)¹¹ 	<ul style="list-style-type: none"> Direct health care costs associated with Hepatitis C predicted to reach \$10.7 billion in the United States between 2010 and 2019¹² 	<ul style="list-style-type: none"> Antiviral drug therapy can cure Hepatitis C¹³ Length of treatment regimens, drug side effects, and drug availability often impede curing Hepatitis C and lead to development of chronic disease¹⁴ 	<ul style="list-style-type: none"> Symptoms of initial Hepatitis C infection include fever, fatigue, nausea, vomiting, decline in appetite, abdominal pain, discoloration of urine and feces, joint pain, and jaundice¹⁵ Symptoms in chronically-infected people may indicate advanced liver disease¹⁶ 60.0–70.0% of chronically-infected individuals develop chronic liver disease¹⁷ 5.0-20.0% of chronically-infected individuals develop cirrhosis¹⁸ 1.0–5.0% of chronically-infected individuals die from cirrhosis or liver cancer¹⁹
Cardio-vascular Disease	<ul style="list-style-type: none"> 33% (adult prevalence)²⁰ 	<ul style="list-style-type: none"> Accounted for 17,853,000 DALYs in high income countries in 2004²¹ 	<ul style="list-style-type: none"> Behavior modifications, drug therapy, and operations such as bypass surgery or heart transplants may help control cardiovascular disease²² 	<ul style="list-style-type: none"> Cardiovascular disease often manifests in acute events such as heart attack or stroke²³ Behavioral risk factors, such as diet, physical inactivity, and tobacco use, are responsible for approximately 80% of CVD²⁴ Elevated blood pressure, elevated blood glucose, elevated blood lipids, and obesity are all symptomatic of cardiovascular disease²⁵
Diabetes	<ul style="list-style-type: none"> 8.3% (overall prevalence)²⁶ 	<ul style="list-style-type: none"> Diabetes was estimated cost the United States \$174 billion in direct health care and lost productivity expenditures²⁷ 	<ul style="list-style-type: none"> Behavior modifications, insulin treatment, and other drug regimens are used to regulate diabetes²⁸ 	<ul style="list-style-type: none"> 50% of people with diabetes die of cardiovascular disease²⁹ On average, diabetics over the age of 50 die 8 years sooner than non-diabetic peers³⁰ After 15 years of diabetes, approximately 2% of people become blind, and about 10% develop severe visual impairment due to diabetic retinopathy³¹ 10-20% of people with diabetes die of kidney failure³² Up to 50% of people with diabetes are affected by diabetic neuropathy, which increases the chance of foot ulcers and can lead to limb amputation³³ Overall risk of dying among people with diabetes is at least double the risk of their peers without diabetes³⁴

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- ¹ Social burden of disease is represented by DALYs, disability-adjusted life years, which allow for the quantification of human disease toll. The World Health Organization, defines a DALY as “a time-based measure that combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than full health.” http://www.who.int/healthinfo/global_burden_disease/en/
- ² *Id* at 202
- ³ Hutchinson, Angela B PhD, MPH, et al. “The Economic Burden of HIV in the United States in the Era of Highly Active Antiretroviral Therapy: Evidence of Continuing Racial and Ethnic Differences.” *JAIDS Journal of Acquired Immune Deficiency Syndromes*: 1 December 2006 - Volume 43 - Issue 4 - pp 451-457.
- ⁴ CDC. “Basic Information about HIV and AIDS.” <http://www.cdc.gov/hiv/topics/basic/index.htm>
- ⁵ World Health Organization. “HIV/AIDS: Antiretroviral therapy.” <http://www.who.int/hiv/topics/treatment/en/index.html>
- ⁶ Mark W. Hull and Julio Montaner. “Antiretroviral Therapy: A Key Component of a Comprehensive HIV Prevention Strategy” *Current HIV/AIDS Report: Volume 8, Number 2*, 85-93
- ⁷ *The development of antiretroviral therapy and its impact on the HIV-1 AIDS pandemic*, Samuel Broder, M.D., Antiviral Research (2010).
- ⁸ CDC. “Basic Information about HIV and AIDS.” <http://www.cdc.gov/hiv/topics/basic/index.htm>
- ⁹ Harrison K.M., Song R, Zhang X. Life Expectancy After HIV Diagnosis Based on National HIV Surveillance Data From 25 States, United States. *Journal of Acquired Immune Deficiency Syndromes (JAIDS)*. 2010; 53(1);124-130.
- ¹⁰ *Ibid*
- ¹¹ PubMed Health. “Hepatitis C.” <http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0001329/>
- ¹² Wong JB, McQuillan GM, McHutchison JG, et al. Estimating future hepatitis C morbidity, mortality, and costs in the United States. *Am J Public Health*. 2000;90:1562-1569.
- ¹³ World Health Organization. “Hepatitis C Fact sheet N°164 June 2011.”
- ¹⁴ *Ibid*
- ¹⁵ *Ibid*
- ¹⁶ *Ibid*
- ¹⁷ *Ibid*
- ¹⁸ *Ibid*
- ¹⁹ *Ibid*
- ²⁰ Lloyd-Jones D, Adams RJ, Brown TM, et al. “Heart Disease and Stroke Statistics—2010 Update. A Report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee.” *Circulation*. 2010;121:e1-e170.
- ²¹ Health Statistics and Informatics Department, World Health Organization. *THE GLOBAL BURDEN OF DISEASE: 2004 UPDATE* (2008). <http://www.who.int/evidence/bod>
- ²² World Health Organization. “Cardiovascular diseases (CVDs) Fact sheet N°317 January 2011.” <http://www.who.int/mediacentre/factsheets/fs317/en/http://www.who.int/mediacentre/factsheets/fs317/en/index.html>
- ²³ World Health Organization. “Cardiovascular diseases (CVDs) Fact sheet N°317 January 2011.” <http://www.who.int/mediacentre/factsheets/fs317/en/>
- ²⁴ *Ibid*
- ²⁵ *Ibid*
- ²⁶ CDC. “2011 National Diabetes Fact Sheet.” <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>
- ²⁷ CDC. “2011 National Diabetes Fact Sheet.” <http://www.cdc.gov/diabetes/pubs/factsheet11.htm>
- ²⁸ WHO. “Diabetes,” *ibid*
- ²⁹ *Ibid*
- ³⁰ Franco O, Steyerberg E, Hu F, Mackenbach J, Nusselder W. Associations of Diabetes Mellitus With Total Life Expectancy and Life Expectancy With and Without Cardiovascular Disease. *Archives of Internal Medicine*. 2007;167(11):1145-1151.
- ³¹ *Ibid*
- ³² *Ibid*
- ³³ *Ibid*
- ³⁴ *Ibid*