

GBD PROFILE: MALAWI

GLOBAL BURDEN OF DISEASES, INJURIES, AND RISK FACTORS STUDY 2010

The Global Burden of Disease Study 2010 (GBD 2010) is a collaborative project of nearly 500 researchers in 50 countries led by the Institute for Health Metrics and Evaluation (IHME) at the University of Washington. It is the largest systematic scientific effort in history to quantify levels and trends of health loss due to diseases, injuries, and risk factors. GBD serves as a global public good to inform evidence-based policymaking and health systems design.

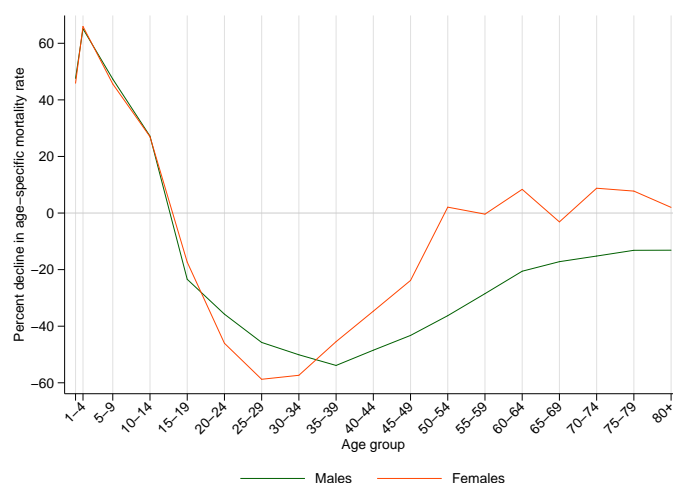
PROFILE OVERVIEW

- In terms of the number of years of life lost (YLLs) due to premature death in Malawi, HIV/AIDS, lower respiratory infections, and malaria were the highest ranking causes in 2010.
- Of the 25 most important causes of burden, as measured by disability-adjusted life years (DALYs), diarrheal diseases showed the largest decrease, falling by 65% from 1990 to 2010.
- The leading risk factor in Malawi is household air pollution from solid fuels.

ALL-CAUSE MORTALITY RATE

- This chart shows the change in mortality rate at every age range. The points above 0 on the chart indicate positive declines in the all-cause mortality rate, while points below 0 indicate an increase in mortality rate between 1990 and 2010.
- The greatest reductions in all-cause mortality rate were experienced by females aged 1-4 years (66%). Females aged 25-29 years saw the largest increase in mortality rate (59%).

Percent decline in age-specific mortality rate by sex from 1990-2010 in Malawi



CAUSES OF PREMATURE DEATH

Years of life lost (YLLs) quantify premature mortality by weighting younger deaths more than older deaths.

Ranks for top 25 causes of YLLs 1990-2010, Malawi

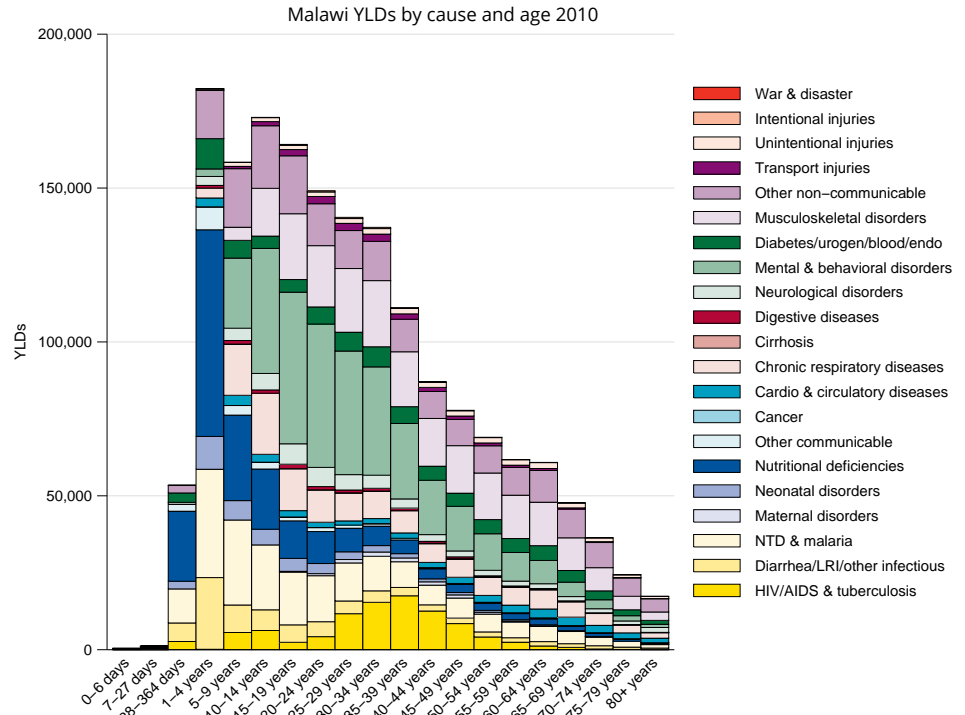
# YLLs in thousands (% of total)	Rank and disorder 1990	Rank and disorder 2010	# YLLs in thousands (% of total)	% change
2,347 (22.2%)	1 Diarrheal diseases	1 HIV/AIDS	2,543 (23.7%)	216
1,356 (12.8%)	2 Malaria	2 Lower respiratory infections	1,043 (9.7%)	6
1,010 (9.6%)	3 Lower respiratory infections	3 Malaria	1,079 (10.0%)	-21
789 (7.5%)	4 HIV/AIDS	4 Diarrheal diseases	797 (7.4%)	-66
641 (6.1%)	5 Protein-energy malnutrition	5 Protein-energy malnutrition	375 (3.5%)	-42
316 (3.0%)	6 Congenital anomalies	6 Neonatal sepsis	366 (3.4%)	35
275 (2.6%)	7 Preterm birth complications	7 Neonatal encephalopathy	320 (3.0%)	16
278 (2.6%)	8 Neonatal encephalopathy	8 Preterm birth complications	309 (2.9%)	11
266 (2.5%)	9 Tuberculosis	9 Tuberculosis	289 (2.7%)	8
281 (2.7%)	10 Neonatal sepsis	10 Road injury	261 (2.4%)	57
239 (2.3%)	11 Meningitis	11 Congenital anomalies	229 (2.1%)	-28
167 (1.6%)	12 Road injury	12 Maternal disorders	223 (2.1%)	64
166 (1.6%)	13 Stroke	13 Stroke	220 (2.0%)	31
135 (1.3%)	14 Maternal disorders	14 Meningitis	196 (1.8%)	-17
118 (1.1%)	15 Measles	15 Ischemic heart disease	141 (1.3%)	33
105 (1.0%)	16 Ischemic heart disease	16 Fire	114 (1.1%)	9
108 (1.0%)	17 Fire	17 Drowning	107 (1.0%)	45
77 (0.7%)	18 Syphilis	18 Cirrhosis	92 (0.9%)	75
79 (0.8%)	19 Drowning	19 Epilepsy	86 (0.8%)	49
61 (0.6%)	20 Epilepsy	20 Syphilis	87 (0.8%)	13
55 (0.5%)	21 COPD	21 Self-harm	83 (0.8%)	152
54 (0.5%)	22 Cirrhosis	22 Diabetes	48 (0.4%)	76
69 (0.7%)	23 Tetanus	23 COPD	46 (0.4%)	-12
43 (0.4%)	24 Rheumatic heart disease	24 Rheumatic heart disease	45 (0.4%)	4
42 (0.4%)	25 Poisonings	25 Falls	44 (0.4%)	88
	27 Self-harm	30 Poisonings		
	30 Diabetes	38 Measles		
	35 Falls	44 Tetanus		

This chart shows the change in the top 25 causes of YLLs due to premature mortality from 1990 to 2010. Solid lines indicate a cause has moved up in rank or stayed the same. Broken lines indicate a cause has moved down in rank. The causes are color coded by blue for non-communicable diseases, green for injuries, and red for communicable, maternal, neonatal, and nutritional causes of death.

YEARS LIVED WITH DISABILITY (YLDs)

Years lived with disability (YLDs) are estimated by weighting the prevalence of different conditions based on severity. The top five leading causes of YLDs in Malawi are iron-deficiency anemia, major depressive disorder, low back pain, HIV/AIDS, and schistosomiasis.

The size of the colored portion in each bar represents the number of YLDs attributable to each cause. The height of each bar shows which age groups had the most YLDs in 2010. The causes are aggregated. For example, musculoskeletal disorders include low back pain and neck pain.

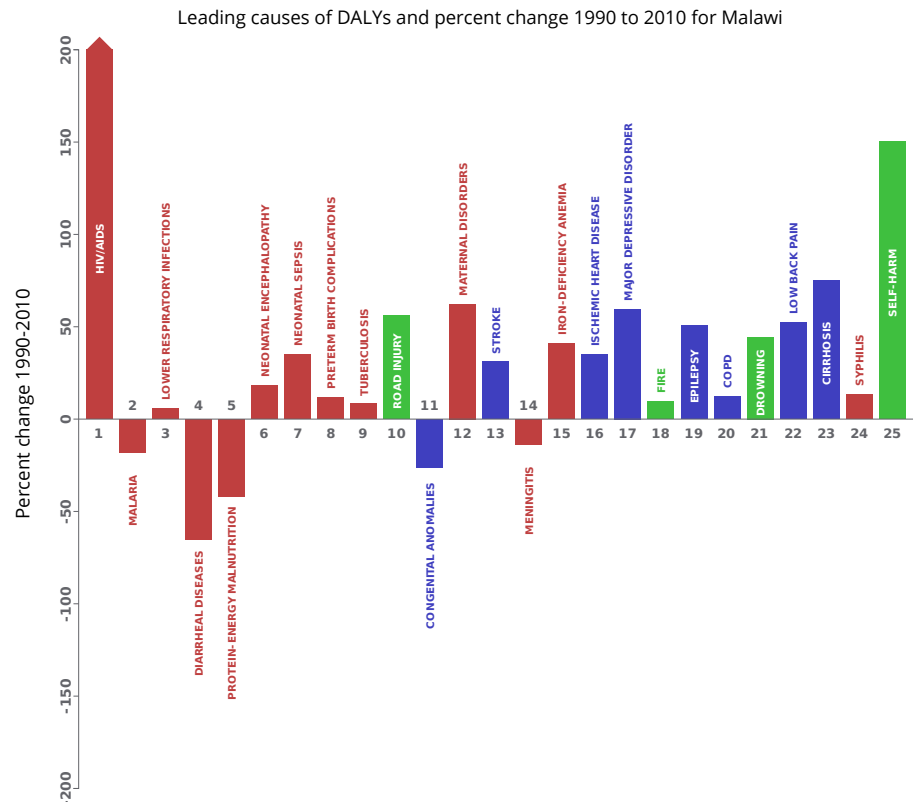


DISABILITY-ADJUSTED LIFE YEARS (DALYs)

Disability-adjusted life years (DALYs) quantify both premature mortality (YLLs) and disability (YLDs) within a population. In Malawi, the top three causes of DALYs in 2010 were HIV/AIDS, malaria, and lower respiratory infections. The only cause to appear in the 10 leading causes of DALYs in 2010 and not 1990 was road injury.

The top 25 causes of DALYs are ranked from left to right in order of the number of DALYs they contributed in 2010. Bars going up show the percent by which DALYs have increased since 1990. Bars going down show the percent by which DALYs have decreased. Globally, non-communicable diseases and injuries are generally on the rise, while communicable, maternal, neonatal, and nutritional causes of DALYs are generally on the decline.

- Communicable, maternal, neonatal, and nutritional
- Non-communicable
- Injuries

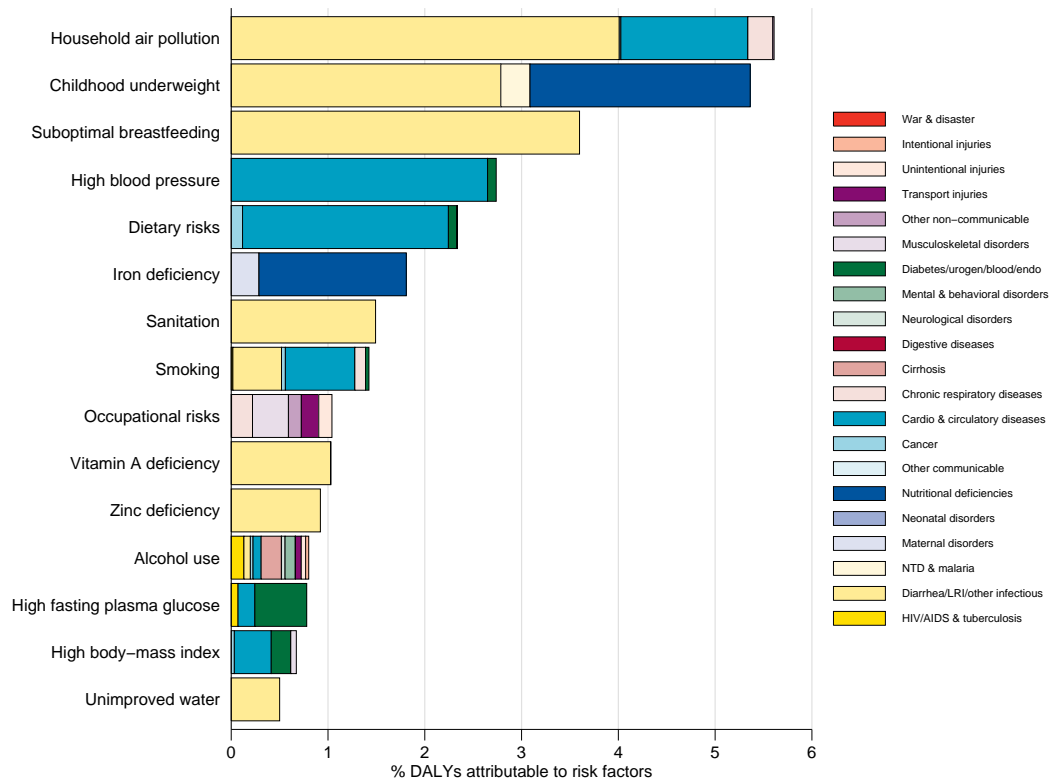


RISK FACTORS

Overall, the three risk factors that account for the most disease burden in Malawi are household air pollution from solid fuels, childhood underweight, and suboptimal breastfeeding. The leading risk factors for children under 5 and adults aged 15-49 years were childhood underweight and dietary risks, respectively, in 2010.

The graph shows the top 15 risk factors for Malawi. The colored portion of each bar represents the specific diseases attributable to that risk factor while bar size represents the percentage of DALYs linked to specific risk factors.

Burden of disease attributable to 15 leading risk factors in 2010, expressed as a percentage of Malawi DALYs



COUNTRY BENCHMARKING OF BURDEN OF DISEASE

Understanding the relative performance of Malawi against other comparator countries provides key insight into public health successes and areas where Malawi might be falling behind. The table identifies Malawi's rank across 14 other comparator countries, selected and ordered by income per capita, for five metrics of interest, with 1 indicating the best rank and 15 indicating the worst rank.

- Age-standardized rates are used to make meaningful comparisons across time by adjusting for changes in population size and age structure.
- Life expectancy incorporates mortality, and health-adjusted life expectancy further incorporates years lived in less than ideal health.
- In 2010, Malawi ranked 8th for age-standardized YLD rate and 13th for age-standardized YLL rate.

Age-standardized death rates, YLL rates, YLD rates, and life expectancy at birth and health-adjusted life expectancy at birth for 1990 and 2010, both sexes combined																					
Country	Age-standardized death rate (per 100,000)				Age-standardized YLL rate (per 100,000)				Age-standardized YLD rate (per 100,000)				Life expectancy at birth				Health-adjusted life expectancy at birth				
	1990		2010		1990		2010		1990		2010		1990		2010		1990		2010		
	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	Rate	Rank	LE	Rank	LE	Rank	HALE	Rank	HALE	Rank	
Guinea-Bissau	1,603	5	1,391	8	72,398	7	55,214	9	14,670	7	14,148	5	50.8	7	56.6	9	42.8	6	48	7	
Afghanistan	1,931	12	1,668	10	68,958	5	52,078	6	17,727	15	17,252	15	51.9	5	57.7	6	42.4	7	47.3	10	
Madagascar	1,451	3	1,156	1	56,586	3	37,200	1	14,116	2	14,145	4	56.1	3	63.6	1	47.6	3	53.8	1	
Togo	1,282	2	1,199	2	51,184	2	46,594	4	14,577	5	13,973	3	58.3	2	60.2	4	49.1	2	51	4	
Mozambique	1,659	6	1,725	11	74,370	8	67,547	14	15,342	12	14,841	10	50	8	52.5	14	41.9	8	44.5	14	
Sierra Leone	1,682	7	1,347	6	78,271	10	49,641	5	15,322	11	15,221	13	48.9	10	58.6	5	40.9	12	49.1	5	
Ethiopia	2,152	15	1,292	4	86,420	14	43,719	2	13,713	1	12,723	1	46.7	14	60.9	2	40.2	14	52.5	2	
Malawi	1,768	10	1,730	12	79,007	11	66,486	13	15,082	9	14,549	8	48.7	11	52.9	13	41	11	45	12	
Central African Republic	2,131	14	2,408	15	81,026	13	90,581	15	15,696	14	15,022	11	48.3	12	46.2	15	40.8	13	39.5	15	
Eritrea	1,807	11	1,353	7	67,111	4	44,346	3	15,508	13	14,614	9	52.4	4	60.6	3	44	4	51.2	3	
Somalia	1,738	8	1,606	9	70,184	6	57,208	10	14,350	3	14,546	7	51.3	6	55.8	10	43.6	5	47.4	9	
Niger	1,765	9	1,268	3	88,497	15	52,955	7	14,526	4	13,915	2	46.1	15	57.7	7	39	15	48.9	6	
Zimbabwe	1,144	1	1,801	14	39,368	1	65,919	12	15,058	8	15,659	14	63	1	53.1	12	52.7	1	44.7	13	
Liberia	1,585	4	1,333	5	75,995	9	53,808	8	15,298	10	15,200	12	49.6	9	57.2	8	41.4	9	47.7	8	
Burundi	1,966	13	1,759	13	80,347	12	62,752	11	14,581	6	14,412	6	48.3	13	54	11	41.1	10	46	11	

COUNTRY BENCHMARKING OF BURDEN OF DISEASE, CONTINUED

This figure shows the rank of Malawi relative to the same comparator countries for the leading causes of DALYs in 1990 (top) and 2010 (bottom).

- The columns are ordered by the absolute number of DALYs in Malawi for that particular year, with greatest burden on the left.
- The numbers indicate the rank across countries for each cause in terms of age-standardized DALY rates, with 1 as the best performance and 15 as the worst.

Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 1990																									
Country	Diarrheal diseases	Malaria	Lower respiratory infections	HIV/AIDS	Protein-energy malnutrition	Congenital anomalies	Neonatal encephalopathy	Preterm birth complications	Tuberculosis	Neonatal sepsis	Meningitis	Road injury	Stroke	Maternal disorders	Iron-deficiency anemia	Ischemic heart disease	Measles	Fire	COPD	Major depressive disorder	Epilepsy	Syphilis	Drowning	Low back pain	Cirrhosis
Guinea-Bissau	7	12	10	5	7	7	11	12	5	13	12	12	7	10	13	8	12	7	9	4	12	12	5	5	9
Afghanistan	3	2	13	1	2	14	1	4	4	2	5	15	15	6	2	15	2	8	4	15	1	1	15	15	10
Madagascar	5	4	3	6	9	12	2	10	1	7	2	8	14	3	13	10	5	8	2	6	14	8	11	6	6
Togo	2	7	2	11	3	3	10	8	2	12	7	7	6	2	10	5	8	2	3	10	10	10	1	10	8
Mozambique	6	15	9	3	4	4	14	11	11	15	9	2	1	8	8	1	11	11	1	12	11	15	12	9	3
Sierra Leone	4	13	12	2	15	9	15	15	6	9	13	6	8	4	15	7	7	6	10	3	14	6	3	7	13
Ethiopia	8	5	14	8	6	10	6	13	13	5	11	11	4	13	5	4	15	14	13	1	4	8	7	1	15
Malawi	13	11	4	14	8	15	13	2	9	11	4	9	12	9	6	12	3	13	5	6	5	5	14	2	11
Central African Republic	11	10	5	12	13	13	5	9	15	3	14	13	11	11	12	14	6	3	15	14	3	13	11	4	12
Eritrea	12	3	7	4	10	1	4	1	12	4	6	5	10	15	11	10	14	9	11	13	7	9	9	12	4
Somalia	10	8	11	10	11	6	7	5	10	6	8	10	9	12	4	9	4	10	7	11	9	3	10	13	2
Niger	15	6	15	9	14	5	8	3	8	10	15	3	5	7	14	6	13	12	6	5	15	11	4	6	7
Zimbabwe	1	1	1	15	1	2	3	6	3	1	1	1	2	1	7	2	1	1	2	8	2	2	6	3	1
Liberia	14	9	6	7	5	11	12	14	7	14	10	4	3	5	9	3	9	4	14	9	13	7	2	8	5
Burundi	9	14	8	13	12	8	9	7	14	8	3	14	13	14	1	11	5	15	12	7	8	4	13	14	14
Ranking of leading age-standardized rates of disability-adjusted life years (DALYs) relative to comparator countries in 2010																									
Country	HIV/AIDS	Malaria	Lower respiratory infections	Diarrheal diseases	Protein-energy malnutrition	Neonatal encephalopathy	Neonatal sepsis	Preterm birth complications	Tuberculosis	Road injury	Congenital anomalies	Maternal disorders	Stroke	Meningitis	Iron-deficiency anemia	Ischemic heart disease	Major depressive disorder	Fire	Epilepsy	COPD	Drowning	Low back pain	Cirrhosis	Syphilis	Self-harm
Guinea-Bissau	7	15	7	10	8	12	13	11	4	11	12	7	7	14	12	10	2	6	15	5	5	9	8	9	2
Afghanistan	1	1	8	1	1	1	1	12	3	14	14	10	15	4	1	15	15	7	1	12	12	15	9	1	6
Madagascar	2	5	1	3	5	2	9	6	1	3	1	4	14	1	5	13	7	3	5	9	7	12	1	13	7
Togo	10	9	5	7	4	10	14	9	2	5	10	1	5	10	8	7	4	4	12	1	2	8	7	12	5
Mozambique	13	14	2	4	3	15	12	8	11	12	2	6	1	7	6	1	5	9	11	4	14	13	3	14	13
Sierra Leone	6	10	4	2	14	13	8	15	6	4	6	5	8	12	15	8	8	1	10	3	1	6	13	3	4
Ethiopia	4	3	11	5	7	3	4	14	8	8	3	3	2	6	2	2	1	8	4	11	6	1	10	10	9
Malawi	14	6	9	8	6	11	10	1	7	13	13	13	12	3	4	12	10	15	6	7	15	2	14	7	14
Central African Republic	12	11	14	15	15	6	3	13	14	15	15	15	11	15	13	14	9	12	3	15	11	4	15	15	11
Eritrea	5	4	3	9	10	5	7	3	10	7	4	11	10	8	11	9	14	11	9	6	8	10	5	6	10
Somalia	9	7	12	13	13	7	5	4	13	6	5	14	9	9	9	6	12	13	8	8	9	14	4	2	8
Niger	3	8	15	14	12	4	11	2	5	1	7	8	4	13	14	5	3	10	13	2	3	5	2	11	1
Zimbabwe	15	2	13	6	2	8	2	7	12	9	11	2	6	2	10	3	13	2	2	13	13	3	12	5	15
Liberia	8	12	10	12	9	14	15	10	9	2	9	12	3	11	7	4	6	5	14	14	4	7	6	8	3
Burundi	11	13	6	11	11	9	6	5	15	10	8	9	13	5	3	11	11	14	7	10	10	11	11	4	12
Ranking Legend	1 - 3		4 - 7				8 - 11				12 - 15														