

Contribution of specific diseases and injuries to changes in health adjusted life expectancy in 187 countries from 1990 to 2013: retrospective observational study

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Appendix A: Decomposition of the changes in health adjusted life expectancy at birth (HALE₀) between 1990 and 2013 into the contribution of 306 diseases and injuries for the globe, by sex

Cause	Level	Male			Female		
		Mortality effect	Disability effect	Total effect	Mortality effect	Disability effect	Total effect
All causes	0	4.9010	0.4085	5.3095	5.4318	0.2989	5.7307
Communicable, maternal, neonatal, and nutritional diseases	1	2.7805	0.1887	2.9692	3.0942	0.1464	3.2405
HIV/AIDS and tuberculosis	2	0.1410	-0.0180	0.1231	0.0411	-0.0298	0.0113
Tuberculosis	3	0.3484	0.0020	0.3504	0.3402	-0.0009	0.3393
HIV/AIDS	3	-0.2073	-0.0200	-0.2273	-0.2991	-0.0289	-0.3280
HIV/AIDS resulting in mycobacterial infection	4	-0.0093	-0.0015	-0.0108	-0.0140	-0.0015	-0.0155
HIV/AIDS resulting in other diseases	4	-0.1980	-0.0185	-0.2165	-0.2850	-0.0275	-0.3125
Diarrhea, lower respiratory, and other common infectious diseases	2	1.7331	0.0274	1.7605	1.9899	0.0197	2.0096
Diarrheal diseases	3	0.6156	0.0140	0.6296	0.7382	0.0112	0.7494
Intestinal infectious diseases	3	0.0323	0.0010	0.0334	0.0295	0.0008	0.0304
Typhoid fever	4	0.0203	0.0007	0.0210	0.0183	0.0006	0.0189
Paratyphoid fever	4	0.0073	0.0002	0.0075	0.0075	0.0002	0.0077
Other intestinal infectious diseases	4	0.0047	0.0001	0.0048	0.0037	0.0001	0.0038
Lower respiratory infections	3	0.6153	0.0023	0.6176	0.7251	-0.0001	0.7251
Upper respiratory infections	3	0.0007	-0.0014	-0.0007	0.0008	-0.0015	-0.0006
Otitis media	3	0.0010	0.0018	0.0028	0.0017	0.0016	0.0033
Meningitis	3	0.0966	0.0077	0.1043	0.0911	0.0056	0.0967
Pneumococcal meningitis	4	0.0213	0.0028	0.0241	0.0208	0.0018	0.0227
H influenzae type B meningitis	4	0.0272	0.0016	0.0287	0.0263	0.0012	0.0275
Meningococcal meningitis	4	0.0166	0.0010	0.0176	0.0131	0.0008	0.0140
Other meningitis	4	0.0315	0.0024	0.0339	0.0309	0.0017	0.0326
Encephalitis	3	0.0134	0.0006	0.0140	0.0147	0.0005	0.0152
Diphtheria	3	0.0021	0.0000	0.0021	0.0024	0.0000	0.0024

Whooping cough	3	0.0306	0.0004	0.0310	0.0411	0.0005	0.0416
Tetanus	3	0.1325	0.0005	0.1330	0.1291	0.0005	0.1296
Measles	3	0.1915	0.0004	0.1919	0.2144	0.0005	0.2149
Varicella and herpes zoster	3	0.0015	0.0000	0.0015	0.0017	0.0000	0.0016
Neglected tropical diseases and malaria	2	0.0833	0.0909	0.1741	0.0978	0.0673	0.1652
Malaria	3	0.0461	0.0001	0.0462	0.0592	-0.0026	0.0567
Chagas disease	3	0.0024	0.0003	0.0027	0.0020	0.0002	0.0022
Leishmaniasis	3	-0.0001	-0.0002	-0.0003	0.0003	-0.0002	0.0001
Visceral leishmaniasis	4	-0.0001	0.0000	-0.0002	0.0003	0.0000	0.0003
Cutaneous and mucocutaneous leishmaniasis	4		-0.0002	-0.0002		-0.0002	-0.0002
African trypanosomiasis	3	0.0065	0.0002	0.0067	0.0080	0.0002	0.0082
Schistosomiasis	3	0.0053	0.0008	0.0060	0.0044	0.0002	0.0045
Cysticercosis	3	0.0002	0.0030	0.0032	0.0002	0.0024	0.0026
Cystic echinococcosis	3	0.0008	0.0006	0.0014	0.0012	0.0006	0.0018
Lymphatic filariasis	3		0.0212	0.0212		0.0008	0.0008
Onchocerciasis	3		0.0114	0.0114		0.0122	0.0122
Trachoma	3		0.0034	0.0034		0.0071	0.0071
Dengue	3	0.0007	-0.0038	-0.0030	0.0006	-0.0046	-0.0040
Yellow fever	3	0.0010	0.0000	0.0010	0.0005	0.0000	0.0005
Rabies	3	0.0103	0.0000	0.0103	0.0071	0.0000	0.0071
Intestinal nematode infections	3	0.0019	0.0468	0.0487	0.0026	0.0483	0.0510
Ascariasis	4	0.0019	0.0329	0.0348	0.0026	0.0330	0.0356
Trichuriasis	4		0.0045	0.0045		0.0045	0.0045
Hookworm disease	4		0.0094	0.0094		0.0109	0.0109
Food-borne trematodiasis	3		0.0007	0.0007		-0.0010	-0.0010
Other neglected tropical diseases	3	0.0082	0.0064	0.0146	0.0117	0.0037	0.0153
Maternal disorders	2				0.1440	0.0044	0.1484
Maternal hemorrhage	3				0.0347	0.0002	0.0349

Maternal sepsis and other maternal infections	3				0.0150	0.0003	0.0153
Maternal hypertensive disorders	3				0.0133	0.0003	0.0135
Obstructed labor	3				0.0138	0.0030	0.0168
Complications of abortion	3				0.0163	0.0000	0.0164
Indirect maternal deaths	3				0.0152		0.0152
Late maternal deaths	3				0.0116		0.0116
Maternal deaths aggravated by HIV/AIDS	3				-0.0006		-0.0006
Other maternal disorders	3				0.0245	0.0006	0.0251
Neonatal disorders	2	0.6463	-0.0461	0.6002	0.5892	-0.0520	0.5372
Preterm birth complications	3	0.3863	-0.0306	0.3558	0.3453	-0.0333	0.3120
Neonatal encephalopathy due to birth asphyxia and trauma	3	0.1102	-0.0036	0.1066	0.0980	-0.0040	0.0940
Neonatal sepsis and other neonatal infections	3	-0.0092	0.0000	-0.0093	-0.0029	0.0000	-0.0029
Hemolytic disease and other neonatal jaundice	3	0.0198	-0.0051	0.0147	0.0204	-0.0060	0.0143
Other neonatal disorders	3	0.1391	-0.0069	0.1323	0.1285	-0.0087	0.1198
Nutritional deficiencies	2	0.0897	0.1289	0.2186	0.1338	0.1329	0.2667
Protein-energy malnutrition	3	0.0633	0.0039	0.0673	0.0684	0.0032	0.0716
Iodine deficiency	3	0.0001	0.0084	0.0085	0.0001	0.0139	0.0140
Vitamin A deficiency	3		0.0007	0.0007		0.0010	0.0010
Iron-deficiency anemia	3	0.0193	0.1139	0.1332	0.0571	0.1131	0.1701
Other nutritional deficiencies	3	0.0069	0.0019	0.0089	0.0082	0.0017	0.0099
Other communicable, maternal, neonatal, and nutritional diseases	2	0.0871	0.0056	0.0927	0.0984	0.0039	0.1023
Sexually transmitted diseases excluding HIV	3	0.0500	-0.0001	0.0500	0.0581	0.0010	0.0591
Syphilis	4	0.0492	0.0004	0.0495	0.0562	0.0004	0.0566
Chlamydial infection	4		-0.0003	-0.0003	0.0006	0.0003	0.0009
Gonococcal infection	4	0.0005	-0.0003	0.0002	0.0007	0.0001	0.0008
Trichomoniasis	4					-0.0001	-0.0001
Genital herpes	4		0.0002	0.0002		0.0002	0.0002
Other sexually transmitted diseases	4	0.0004		0.0004	0.0006	0.0001	0.0007

Hepatitis	3	0.0263	0.0008	0.0272	0.0307	0.0009	0.0316
Hepatitis A	4	0.0035	0.0000	0.0034	0.0058	0.0000	0.0058
Hepatitis B	4	0.0181	0.0007	0.0188	0.0146	0.0008	0.0154
Hepatitis C	4	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
Hepatitis E	4	0.0047	0.0001	0.0048	0.0102	0.0000	0.0103
Leprosy	3		-0.0001	-0.0001		0.0000	0.0000
Other infectious diseases	3	0.0107	0.0050	0.0157	0.0095	0.0020	0.0115
Non-communicable diseases	1	1.6250	-0.0720	1.5530	1.8976	-0.1124	1.7852
Neoplasms	2	0.3280	-0.0130	0.3150	0.3525	-0.0060	0.3465
Esophageal cancer	3	0.0178	0.0002	0.0180	0.0250	0.0004	0.0254
Stomach cancer	3	0.1004	0.0018	0.1021	0.0850	0.0014	0.0864
Liver cancer	3	0.0232	-0.0003	0.0229	0.0143	-0.0001	0.0142
Liver cancer due to hepatitis B	4	0.0154	-0.0001	0.0154	0.0045	0.0000	0.0045
Liver cancer due to hepatitis C	4	-0.0426	-0.0009	-0.0435	-0.0194	-0.0004	-0.0199
Liver cancer due to alcohol use	4	0.0307	0.0004	0.0312	0.0129	0.0002	0.0131
Liver cancer due to other causes	4	0.0197	0.0002	0.0199	0.0164	0.0002	0.0166
Larynx cancer	3	0.0137	0.0005	0.0142	0.0032	0.0002	0.0033
Tracheal, bronchus and lung cancer	3	0.0813	0.0009	0.0821	0.0092	-0.0006	0.0086
Breast cancer	3	0.0007	0.0000	0.0006	0.0400	-0.0052	0.0348
Cervical cancer	3				0.0449	0.0030	0.0479
Uterine cancer	3				0.0048	0.0002	0.0050
Prostate cancer	3	0.0047	-0.0096	-0.0049			
Colon and rectum cancer	3	0.0116	-0.0020	0.0096	0.0288	-0.0004	0.0283
Lip and oral cavity cancer	3	0.0036	0.0003	0.0038	0.0013	-0.0002	0.0011
Nasopharynx cancer	3	0.0061	0.0001	0.0062	0.0072	0.0002	0.0074
Other pharynx cancer	3	0.0022	0.0000	0.0022	0.0007	0.0000	0.0008
Gallbladder and biliary tract cancer	3	0.0069	0.0001	0.0070	0.0161	0.0002	0.0164
Pancreatic cancer	3	-0.0011	-0.0001	-0.0011	-0.0041	-0.0002	-0.0043

Malignant skin melanoma	3	0.0013	-0.0004	0.0010	0.0033	0.0000	0.0033
Non-melanoma skin cancer	3	0.0010	-0.0005	0.0005	0.0016	-0.0009	0.0007
Ovarian cancer	3				0.0057	0.0000	0.0057
Testicular cancer	3	0.0011	0.0000	0.0011			
Kidney cancer	3	-0.0007	-0.0007	-0.0014	0.0036	-0.0002	0.0034
Bladder cancer	3	0.0150	0.0007	0.0157	0.0064	0.0003	0.0066
Brain and nervous system cancer	3	0.0043	-0.0001	0.0042	0.0068	-0.0002	0.0066
Thyroid cancer	3	0.0005	-0.0001	0.0003	0.0026	-0.0004	0.0022
Mesothelioma	3	-0.0018	-0.0001	-0.0019	0.0010	0.0000	0.0010
Hodgkin lymphoma	3	0.0060	0.0002	0.0062	0.0077	0.0004	0.0081
Non-Hodgkin lymphoma	3	-0.0005	-0.0008	-0.0013	0.0019	-0.0007	0.0012
Multiple myeloma	3	0.0001	-0.0002	-0.0001	0.0005	-0.0001	0.0004
Leukemia	3	0.0226	-0.0004	0.0222	0.0238	-0.0001	0.0237
Other neoplasms	3	0.0081	-0.0025	0.0057	0.0112	-0.0030	0.0081
Cardiovascular diseases	2	0.7150	-0.0006	0.7144	0.9866	-0.0513	0.9353
Rheumatic heart disease	3	0.0538	-0.0003	0.0534	0.0926	-0.0029	0.0897
Ischemic heart disease	3	0.3438	0.0132	0.3571	0.4101	-0.0075	0.4026
Cerebrovascular disease	3	0.2384	-0.0024	0.2360	0.4118	-0.0022	0.4096
Ischemic stroke	4	0.0758	-0.0010	0.0748	0.1732	-0.0005	0.1727
Hemorrhagic stroke	4	0.1626	-0.0014	0.1612	0.2387	-0.0017	0.2370
Hypertensive heart disease	3	0.0081	-0.0019	0.0062	0.0170	-0.0048	0.0122
Cardiomyopathy and myocarditis	3	0.0120	-0.0003	0.0117	0.0106	-0.0017	0.0090
Atrial fibrillation and flutter	3	-0.0044	0.0033	-0.0011	-0.0109	0.0006	-0.0103
Aortic aneurysm	3	0.0068		0.0068	0.0025		0.0025
Peripheral vascular disease	3	-0.0007	0.0007	0.0000	-0.0021	0.0007	-0.0013
Endocarditis	3	0.0008	-0.0001	0.0008	0.0031	0.0000	0.0031
Other cardiovascular and circulatory diseases	3	0.0563	-0.0127	0.0435	0.0517	-0.0336	0.0181
Chronic respiratory diseases	2	0.3609	0.0041	0.3650	0.3518	-0.0061	0.3457

Chronic obstructive pulmonary disease	3	0.2311	-0.0128	0.2183	0.2688	-0.0201	0.2487
Pneumoconiosis	3	0.0491	-0.0001	0.0490	0.0141	-0.0001	0.0140
Silicosis	4	0.0168	0.0000	0.0168	0.0002	0.0000	0.0002
Asbestosis	4	0.0044	0.0000	0.0044	0.0000	0.0000	0.0000
Coal workers pneumoconiosis	4	0.0079	0.0000	0.0079	0.0005	0.0000	0.0005
Other pneumoconiosis	4	0.0200	-0.0002	0.0199	0.0134	-0.0001	0.0133
Asthma	3	0.0749	0.0064	0.0813	0.0726	0.0036	0.0761
Interstitial lung disease and pulmonary sarcoidosis	3	-0.0068	0.0000	-0.0068	-0.0138	-0.0001	-0.0138
Other chronic respiratory diseases	3	0.0126	0.0107	0.0233	0.0101	0.0106	0.0206
Cirrhosis	2	0.0427	0.0010	0.0437	0.0422	0.0011	0.0433
Cirrhosis due to hepatitis B	3	0.0171	0.0003	0.0174	0.0178	0.0005	0.0182
Cirrhosis due to hepatitis C	3	0.0015	-0.0001	0.0014	0.0036	0.0000	0.0036
Cirrhosis due to alcohol use	3	0.0300	0.0010	0.0310	0.0166	0.0006	0.0172
Cirrhosis due to other causes	3	-0.0059	-0.0002	-0.0061	0.0042	0.0000	0.0042
Digestive diseases	2	0.1407	0.0277	0.1684	0.1208	0.0380	0.1588
Peptic ulcer disease	3	0.0614	0.0153	0.0767	0.0383	0.0161	0.0544
Gastritis and duodenitis	3	0.0070	0.0087	0.0157	0.0076	0.0125	0.0200
Appendicitis	3	0.0147	0.0001	0.0148	0.0175	0.0005	0.0181
Paralytic ileus and intestinal obstruction	3	0.0189	0.0000	0.0189	0.0114	0.0000	0.0114
Inguinal, femoral, and abdominal hernia	3	0.0123	0.0008	0.0131	0.0086	0.0004	0.0089
Inflammatory bowel disease	3	0.0070	-0.0020	0.0050	0.0107	-0.0023	0.0084
Vascular intestinal disorders	3	0.0030	0.0000	0.0030	0.0027	0.0000	0.0027
Gallbladder and biliary diseases	3	0.0051	0.0009	0.0060	0.0097	0.0027	0.0124
Pancreatitis	3	0.0022	-0.0004	0.0018	0.0063	-0.0007	0.0057
Other digestive diseases	3	0.0090	0.0044	0.0134	0.0079	0.0089	0.0168
Neurological disorders	2	0.0087	-0.0161	-0.0074	-0.0004	-0.0337	-0.0341
Alzheimer disease and other dementias	3	-0.0021	-0.0004	-0.0025	-0.0114	-0.0017	-0.0131
Parkinson disease	3	-0.0025	-0.0004	-0.0030	-0.0022	-0.0002	-0.0024

Epilepsy	3	0.0120	-0.0024	0.0097	0.0118	-0.0029	0.0089
Multiple sclerosis	3	0.0004	-0.0014	-0.0010	0.0004	-0.0031	-0.0027
Migraine	3		-0.0036	-0.0036		0.0018	0.0018
Tension-type headache	3		-0.0025	-0.0025		0.0026	0.0026
Primary headache with medication overuse	3		-0.0200	-0.0200		-0.0432	-0.0432
Other neurological disorders	3	0.0009	0.0145	0.0154	0.0011	0.0129	0.0140
Mental and substance use disorders	2	0.0038	-0.0144	-0.0106	0.0042	-0.0190	-0.0148
Schizophrenia	3	0.0040	0.0007	0.0046	0.0061	0.0013	0.0074
Alcohol use disorders	3	0.0146	0.0074	0.0220	0.0063	0.0033	0.0095
Drug use disorders	3	-0.0148	-0.0022	-0.0169	-0.0081	0.0001	-0.0081
Opioid use disorders	4	-0.0082	-0.0051	-0.0133	-0.0034	-0.0016	-0.0050
Cocaine use disorders	4	-0.0001	0.0007	0.0006	-0.0002	0.0003	0.0001
Amphetamine use disorders	4	-0.0001	0.0007	0.0006	-0.0001	0.0004	0.0002
Cannabis use disorders	4		0.0002	0.0002		0.0002	0.0002
Other drug use disorders	4	-0.0064	0.0013	-0.0051	-0.0044	0.0007	-0.0036
Depressive disorders	3		-0.0207	-0.0207		-0.0243	-0.0243
Major depressive disorder	4		-0.0203	-0.0203		-0.0238	-0.0238
Dysthymia	4		-0.0004	-0.0004		-0.0005	-0.0005
Bipolar disorder	3		-0.0011	-0.0011		-0.0016	-0.0016
Anxiety disorders	3		0.0009	0.0009		-0.0002	-0.0002
Eating disorders	3	0.0000	0.0001	0.0001	0.0000	0.0003	0.0003
Anorexia nervosa	4	0.0000	0.0000	0.0000	0.0000	-0.0004	-0.0004
Bulimia nervosa	4		0.0001	0.0001		0.0007	0.0007
Autistic spectrum disorders	3		-0.0005	-0.0005		-0.0001	-0.0001
Autism	4		-0.0003	-0.0003		-0.0001	-0.0001
Asperger syndrome	4		-0.0002	-0.0002		0.0000	0.0000
Attention-deficit/hyperactivity disorder	3		0.0000	0.0000		0.0000	0.0000
Conduct disorder	3		-0.0015	-0.0015		-0.0003	-0.0003

Idiopathic intellectual disability	3		0.0029	0.0029		0.0028	0.0028
Other mental and substance use disorders	3		-0.0006	-0.0006		-0.0002	-0.0002
Diabetes, urogenital, blood, and endocrine diseases	2	-0.0477	-0.1038	-0.1515	-0.0455	-0.0990	-0.1446
Diabetes mellitus	3	-0.0153	-0.1226	-0.1379	-0.0046	-0.1028	-0.1075
Acute glomerulonephritis	3	0.0038	0.0000	0.0039	0.0051	0.0000	0.0051
Chronic kidney disease	3	-0.0379	0.0066	-0.0313	-0.0341	0.0028	-0.0312
Chronic kidney disease due to diabetes mellitus	4	-0.0140	-0.0028	-0.0168	-0.0158	-0.0049	-0.0207
Chronic kidney disease due to hypertension	4	-0.0095	0.0098	0.0003	-0.0087	0.0106	0.0019
Chronic kidney disease due to glomerulonephritis	4	0.0090	0.0018	0.0108	0.0116	0.0018	0.0134
Chronic kidney disease due to other causes	4	-0.0234	-0.0022	-0.0256	-0.0211	-0.0047	-0.0258
Urinary diseases and male infertility	3	0.0067	-0.0047	0.0020	0.0027	-0.0024	0.0004
Interstitial nephritis and urinary tract infections	4	0.0054	0.0000	0.0054	0.0026	-0.0002	0.0024
Urolithiasis	4	0.0025	-0.0020	0.0005	0.0017	-0.0013	0.0004
Benign prostatic hyperplasia	4		0.0006	0.0006			
Male infertility due to other causes	4		-0.0001	-0.0001			
Other urinary diseases	4	-0.0012	-0.0031	-0.0043	-0.0016	-0.0009	-0.0024
Gynecological diseases	3				0.0025	0.0068	0.0094
Uterine fibroids	4				0.0006	0.0069	0.0075
Polycystic ovarian syndrome	4				0.0001	-0.0005	-0.0004
Female infertility due to other causes	4					-0.0003	-0.0003
Endometriosis	4				0.0003	0.0004	0.0007
Genital prolapse	4				0.0004	0.0001	0.0005
Premenstrual syndrome	4					-0.0037	-0.0037
Other gynecological diseases	4				0.0012	0.0038	0.0050
Hemoglobinopathies and hemolytic anemias	3	-0.0037	0.0110	0.0073	-0.0160	-0.0072	-0.0232
Thalassemias	4	0.0059	0.0000	0.0059	0.0075	0.0000	0.0075
Thalassemia trait	4		0.0024	0.0024		-0.0066	-0.0066
Sickle cell disorders	4	-0.0139	-0.0009	-0.0148	-0.0260	-0.0008	-0.0268

Sickle cell trait	4		-0.0002	-0.0002		-0.0024	-0.0024
G6PD deficiency	4	0.0001	0.0000	0.0001	0.0002	-0.0001	0.0001
G6PD trait	4					0.0000	0.0000
Other hemoglobinopathies and hemolytic anemias	4	0.0042	0.0097	0.0139	0.0024	0.0027	0.0051
Endocrine, metabolic, blood, and immune disorders	3	-0.0013	0.0058	0.0044	-0.0013	0.0038	0.0025
Musculoskeletal disorders	2	-0.0004	-0.0292	-0.0296	-0.0009	-0.0039	-0.0048
Rheumatoid arthritis	3	0.0011	-0.0016	-0.0004	0.0030	0.0060	0.0090
Osteoarthritis	3		0.0009	0.0009		-0.0030	-0.0030
Low back and neck pain	3		-0.0141	-0.0141		0.0155	0.0155
Low back pain	4		-0.0170	-0.0170		0.0140	0.0140
Neck pain	4		0.0029	0.0029		0.0015	0.0015
Gout	3		0.0001	0.0001		0.0001	0.0001
Other musculoskeletal disorders	3	-0.0015	-0.0146	-0.0161	-0.0039	-0.0225	-0.0264
Other non-communicable diseases	2	0.0733	0.0724	0.1457	0.0863	0.0675	0.1538
Congenital anomalies	3	0.0692	-0.0128	0.0564	0.0829	-0.0149	0.0681
Neural tube defects	4	0.0333	-0.0008	0.0324	0.0419	-0.0009	0.0410
Congenital heart anomalies	4	0.0291	-0.0034	0.0257	0.0343	-0.0033	0.0309
Orofacial clefts	4	0.0022	-0.0002	0.0020	0.0017	-0.0002	0.0015
Down syndrome	4	0.0034	-0.0035	-0.0001	0.0059	-0.0037	0.0023
Turner syndrome	4					0.0000	0.0000
Klinefelter syndrome	4		0.0000	0.0000			
Chromosomal unbalanced rearrangements	4	0.0009	-0.0043	-0.0034	0.0018	-0.0045	-0.0027
Other congenital anomalies	4	0.0004	-0.0006	-0.0002	-0.0027	-0.0022	-0.0049
Skin and subcutaneous diseases	3	0.0003	-0.0011	-0.0007	0.0008	0.0003	0.0010
Dermatitis	4		0.0004	0.0004		0.0007	0.0007
Psoriasis	4		0.0008	0.0008		0.0011	0.0011
Cellulitis	4	0.0022	0.0003	0.0025	0.0042	0.0003	0.0044
Pyoderma	4	-0.0014	0.0001	-0.0013	-0.0025	0.0001	-0.0024

Scabies	4		0.0000	0.0000		0.0009	0.0009
Fungal skin diseases	4		-0.0011	-0.0011		-0.0009	-0.0009
Viral skin diseases	4		0.0005	0.0005		0.0006	0.0006
Acne vulgaris	4		0.0013	0.0013		-0.0010	-0.0010
Alopecia areata	4		0.0000	0.0000		0.0000	0.0000
Pruritus	4		0.0000	0.0000		0.0000	0.0000
Urticaria	4		-0.0035	-0.0035		-0.0021	-0.0021
Decubitus ulcer	4	-0.0003	0.0002	-0.0001	-0.0005	0.0005	0.0000
Other skin and subcutaneous diseases	4	-0.0001	-0.0001	-0.0002	-0.0004	0.0000	-0.0003
Sense organ diseases	3		0.0666	0.0666		0.0613	0.0613
Glaucoma	4		0.0007	0.0007		0.0006	0.0006
Cataract	4		0.0074	0.0074		0.0071	0.0071
Macular degeneration	4		0.0003	0.0003		0.0009	0.0009
Uncorrected refractive error	4		0.0154	0.0154		0.0141	0.0141
Age-related and other hearing loss	4		0.0369	0.0369		0.0325	0.0325
Other vision loss	4		0.0061	0.0061		0.0062	0.0062
Other sense organ diseases	4		-0.0002	-0.0002		-0.0002	-0.0002
Oral disorders	3		0.0197	0.0197		0.0209	0.0209
Deciduous caries	4		0.0000	0.0000		0.0000	0.0000
Permanent caries	4		-0.0006	-0.0006		-0.0006	-0.0006
Periodontal diseases	4		-0.0006	-0.0006		-0.0009	-0.0009
Edentulism and severe tooth loss	4		0.0209	0.0209		0.0221	0.0221
Other oral disorders	4		-0.0001	-0.0001		0.0003	0.0003
Sudden infant death syndrome	3	0.0038		0.0038	0.0026		0.0026
Injuries	1	0.4956	0.2918	0.7874	0.4401	0.2649	0.7050
Transport injuries	2	0.0763	0.0673	0.1436	0.0493	0.0369	0.0862
Road injuries	3	0.0607	0.0545	0.1153	0.0397	0.0298	0.0695
Pedestrian road injuries	4	0.0238	0.0108	0.0346	0.0064	0.0041	0.0105

Cyclist road injuries	4	0.0025	0.0057	0.0082	0.0057	0.0039	0.0096
Motorcyclist road injuries	4	0.0100	0.0130	0.0231	0.0158	0.0082	0.0241
Motor vehicle road injuries	4	0.0132	0.0242	0.0374	0.0080	0.0130	0.0210
Other road injuries	4	0.0112	0.0008	0.0120	0.0038	0.0005	0.0043
Other transport injuries	3	0.0156	0.0127	0.0283	0.0096	0.0071	0.0167
Unintentional injuries	2	0.3099	0.1111	0.4210	0.2650	0.1304	0.3955
Falls	3	0.0086	0.0608	0.0694	0.0101	0.1061	0.1162
Drowning	3	0.1342	0.0029	0.1371	0.0917	0.0018	0.0934
Fire, heat, and hot substances	3	0.0362	0.0063	0.0424	0.0756	0.0086	0.0843
Poisonings	3	0.0245	0.0005	0.0250	0.0193	0.0004	0.0198
Exposure to mechanical forces	3	0.0505	0.0309	0.0813	0.0275	0.0040	0.0314
Unintentional firearm injuries	4	0.0112	0.0011	0.0123	0.0034	0.0002	0.0035
Unintentional suffocation	4	0.0244	0.0000	0.0243	0.0226	0.0000	0.0226
Other exposure to mechanical forces	4	0.0149	0.0298	0.0447	0.0016	0.0038	0.0053
Adverse effects of medical treatment	3	0.0025	0.0001	0.0027	0.0004	0.0002	0.0005
Animal contact	3	0.0145	0.0030	0.0175	0.0181	0.0018	0.0199
Venomous animal contact	4	0.0124	0.0011	0.0135	0.0170	0.0007	0.0177
Non-venomous animal contact	4	0.0021	0.0019	0.0039	0.0011	0.0011	0.0022
Foreign body	3	0.0184	0.0009	0.0193	0.0082	0.0005	0.0088
Pulmonary aspiration and foreign body in airway	4	0.0183	0.0003	0.0187	0.0083	0.0002	0.0085
Foreign body in eyes	4		0.0001	0.0001		0.0001	0.0001
Foreign body in other body part	4	0.0001	0.0005	0.0006	0.0000	0.0002	0.0002
Other unintentional injuries	3	0.0204	0.0057	0.0262	0.0141	0.0070	0.0211
Self-harm and interpersonal violence	2	0.0754	0.0077	0.0831	0.1028	0.0044	0.1072
Self-harm	3	0.0463	0.0020	0.0483	0.0844	0.0015	0.0859
Interpersonal violence	3	0.0291	0.0056	0.0348	0.0184	0.0029	0.0213
Assault by firearm	4	-0.0016	0.0007	-0.0009	0.0022	0.0003	0.0025
Assault by sharp object	4	0.0086	0.0009	0.0094	0.0035	0.0002	0.0037

Assault by other means	4	0.0221	0.0041	0.0263	0.0128	0.0024	0.0152
Forces of nature, war, and legal intervention	2	0.0339	0.1057	0.1397	0.0229	0.0932	0.1161
Exposure to forces of nature	3	0.0108	0.0058	0.0166	0.0052	0.0014	0.0066
Collective violence and legal intervention	3	0.0231	0.0999	0.1230	0.0177	0.0917	0.1095

Blank cell means no data available for the categories.

Appendix B: Health adjusted life expectancy at birth changes between 1990 and 2013 and the contributions of diseases and injuries in 187 countries, 21 regions

Table B1 Health adjusted life expectancy at birth (HALE₀) changes between 1990 and 2013 and the contributions of Communicable, maternal, neonatal, and nutritional diseases (I), Non-communicable diseases (II) and Injuries (III) to these changes for in 187 countries, 21 regions (years, male)

	HALE ₀			Contribution of diseases and injuries to HALE ₀ changes		
	1990	2013	changes	I	II	III
	Global	55.2301	60.5397	5.3095	2.9692	1.5530
Developing countries	53.8855	59.3769	5.4913	3.5688	1.1938	0.7287
Developed countries	62.1593	66.1713	4.0120	0.4335	2.5803	0.9982
East Asia	59.2731	65.8689	6.5957	3.0260	2.4761	1.0937
China	59.2117	65.8992	6.6875	3.0746	2.5062	1.1067
North Korea	59.2673	61.4955	2.2281	1.8017	0.1061	0.3204
Southeast Asia	55.8212	61.3070	5.4858	3.7888	0.4412	1.2558
Cambodia	39.7228	54.5630	14.8402	5.9122	0.1532	8.7747
Indonesia	56.1814	61.2887	5.1073	4.5768	-0.1000	0.6305
Laos	47.4379	56.3012	8.8632	8.1518	0.3519	0.3595
Malaysia	62.3598	64.0469	1.6871	0.8741	0.7142	0.0988
Maldives	58.1772	68.5045	10.3272	3.9318	4.1311	2.2643
Myanmar	49.5986	57.3592	7.7606	6.2183	0.7985	0.7438
Philippines	54.9299	58.6942	3.7644	2.7583	-0.9019	1.9080
Sri Lanka	59.6671	64.0829	4.4157	2.5077	0.2127	1.6953
Thailand	61.3576	64.2279	2.8703	1.8442	1.1341	-0.1081
Timor-Leste	51.3156	61.5860	10.2704	9.2587	0.7123	0.2993
Vietnam	55.5516	63.6690	8.1174	2.9039	2.0835	3.1300
Oceania	50.8986	53.9734	3.0748	2.5680	0.5904	-0.0836
Fiji	55.4002	57.7672	2.3669	1.3921	1.2400	-0.2652
Kiribati	49.4244	52.2004	2.7760	3.6032	-0.6460	-0.1812
Marshall Islands	55.4940	56.3032	0.8092	1.7027	-0.9267	0.0332
Federated States of Micronesia	54.2908	58.2910	4.0001	3.0291	0.7646	0.2064
Papua New Guinea	49.2461	52.8414	3.5953	3.0579	0.5993	-0.0619
Samoa	59.1181	63.6085	4.4904	1.9077	2.1767	0.4060
Solomon Islands	53.5944	56.4721	2.8777	2.8560	0.0633	-0.0416
Tonga	60.1750	60.7966	0.6216	0.7962	-0.2849	0.1103
Vanuatu	54.9019	56.5889	1.6870	1.7893	0.0147	-0.1170
Central Asia	56.0087	58.6394	2.6308	1.7555	0.1653	0.7100
Armenia	59.0743	62.6886	3.6143	1.7567	0.5925	1.2651
Azerbaijan	55.6714	61.1501	5.4787	2.8202	1.6041	1.0544
Georgia	58.7548	60.4775	1.7227	1.3169	-0.5179	0.9238
Kazakhstan	55.3913	56.2382	0.8469	0.7964	-0.3609	0.4114

Kyrgyzstan	54.8672	57.8657	2.9984	2.2814	-0.4281	1.1451
Mongolia	53.0523	54.5422	1.4899	3.3025	-1.3805	-0.4322
Tajikistan	55.4913	60.1909	4.6996	3.3144	0.7073	0.6779
Turkmenistan	53.5222	57.0731	3.5509	2.6634	0.0322	0.8552
Uzbekistan	57.5645	59.5246	1.9600	1.3550	0.1837	0.4214
Central Europe	59.2557	64.3310	5.0753	0.9079	2.9988	1.1686
Albania	61.8006	63.7660	1.9654	1.7307	-0.2466	0.4813
Bosnia and Herzegovina	61.2032	65.1849	3.9817	1.0993	2.2813	0.6011
Bulgaria	60.0203	62.7600	2.7398	0.5279	1.2167	0.9952
Croatia	60.9227	65.4806	4.5580	0.5512	2.7570	1.2498
Czech Republic	59.6017	65.7049	6.1032	0.3948	4.5547	1.1538
Hungary	57.7430	63.6068	5.8638	0.7272	3.5654	1.5712
Macedonia	61.6270	65.0793	3.4523	1.7044	0.7102	1.0377
Montenegro	61.6172	64.0633	2.4462	0.7628	1.2763	0.4071
Poland	58.6584	63.9907	5.3324	0.7454	3.5461	1.0409
Romania	58.6588	63.9865	5.3277	1.4229	2.5992	1.3056
Serbia	61.8633	66.1951	4.3318	0.8452	2.0037	1.4829
Slovakia	58.8216	63.8791	5.0575	0.6227	3.1558	1.2790
Slovenia	60.8390	66.8225	5.9835	0.3911	3.8690	1.7234
Eastern Europe	57.5236	59.1372	1.6136	0.1053	0.4634	1.0449
Belarus	58.7108	57.9390	-0.7718	0.3180	-1.1543	0.0645
Estonia	58.1850	63.7793	5.5944	0.6996	2.4870	2.4078
Latvia	57.8518	62.7436	4.8918	0.4778	2.1329	2.2810
Lithuania	59.1520	62.2042	3.0522	0.2963	1.2805	1.4755
Moldova	57.6194	60.3626	2.7432	0.5249	0.9273	1.2909
Russia	57.2825	58.9693	1.6868	0.1592	0.4249	1.1027
Ukraine	57.8676	59.3991	1.5315	-0.1760	0.7226	0.9848
High-income Asia Pacific	66.4901	70.8690	4.3790	0.5176	3.0085	0.8529
Brunei	65.0665	68.7192	3.6527	-0.0980	2.8317	0.9190
Japan	68.2574	71.6425	3.3851	0.4304	2.3646	0.5901
South Korea	60.4446	68.2135	7.7690	0.7712	5.5728	1.4249
Singapore	65.2156	70.7025	5.4869	0.5916	4.0477	0.8476
Australasia	64.0862	68.6334	4.5472	0.2853	3.3218	0.9401
Australia	64.2441	68.6789	4.4347	0.2521	3.2724	0.9103
New Zealand	63.3221	68.4153	5.0932	0.4295	3.5861	1.0776
Western Europe	63.6161	68.3757	4.7596	0.3839	3.3459	1.0298
Andorra	66.8112	69.8501	3.0389	0.2568	1.9887	0.7934
Austria	63.4376	68.7376	5.3000	0.2778	3.5979	1.4243
Belgium	63.0226	67.2329	4.2103	0.2405	3.0531	0.9166
Cyprus	65.0535	69.1077	4.0542	0.5170	1.9130	1.6242
Denmark	63.2032	67.8505	4.6474	0.2663	3.0367	1.3444
Finland	61.4218	66.7365	5.3147	0.4736	3.4273	1.4138

France	64.0968	68.6799	4.5831	0.5051	2.8507	1.2273
Germany	62.3222	67.5108	5.1887	0.3161	3.8364	1.0362
Greece	65.3000	67.8532	2.5532	0.2982	1.4355	0.8195
Iceland	65.9780	70.2454	4.2674	0.4793	2.6504	1.1377
Ireland	63.3051	68.2130	4.9079	0.3792	3.6804	0.8483
Israel	65.1855	69.4209	4.2354	0.3082	3.1176	0.8096
Italy	64.5529	69.4102	4.8573	0.4504	3.4275	0.9795
Luxembourg	62.5390	68.8598	6.3208	0.3504	4.8505	1.1199
Malta	64.9894	68.7254	3.7361	0.2325	2.8338	0.6698
Netherlands	64.5488	68.5105	3.9617	0.1398	3.3308	0.4911
Norway	64.2455	68.5914	4.3459	0.3744	3.0032	0.9683
Portugal	61.8286	66.8676	5.0390	0.3626	3.0645	1.6119
Spain	63.9875	68.6454	4.6580	0.5638	2.9568	1.1373
Sweden	64.7783	68.5143	3.7359	0.3254	2.3990	1.0115
Switzerland	63.6524	68.8809	5.2285	0.4054	3.0417	1.7814
United Kingdom	63.7914	68.6360	4.8446	0.3216	3.7893	0.7337
Southern Latin America	61.3498	64.9892	3.6395	0.7701	2.0280	0.8413
Argentina	61.2316	64.1354	2.9038	0.6112	1.6740	0.6186
Chile	61.6799	67.2783	5.5983	1.4115	2.7439	1.4430
Uruguay	61.4552	64.7303	3.2751	0.6542	1.9301	0.6909
High-income North America	62.9492	66.2713	3.3221	0.5575	2.0176	0.7470
Canada	65.1993	69.3956	4.1963	0.3293	3.0613	0.8057
United States	62.7052	65.9231	3.2178	0.5803	1.8974	0.7401
Caribbean	58.0735	61.8373	3.7639	3.0158	0.5232	0.2249
Antigua and Barbuda	61.8385	64.3178	2.4794	0.4113	1.6837	0.3843
The Bahamas	58.2027	61.7202	3.5175	1.2374	1.6183	0.6617
Barbados	62.3559	65.1212	2.7653	0.7553	1.4921	0.5178
Belize	61.6727	60.2068	-1.4659	0.7787	-1.6626	-0.5821
Cuba	64.3690	67.2707	2.9016	0.4686	1.1250	1.3081
Dominica	61.0731	62.7305	1.6574	0.7510	0.0918	0.8146
Dominican Republic	61.2217	62.9651	1.7434	2.3407	-0.4378	-0.1595
Grenada	60.1169	61.3482	1.2314	1.1672	0.0289	0.0352
Guyana	55.1444	54.6956	-0.4488	0.4362	-0.4850	-0.4001
Haiti	47.5468	55.5469	8.0001	7.7178	0.7145	-0.4322
Jamaica	65.0696	65.5750	0.5054	0.6794	0.0604	-0.2344
Saint Lucia	60.1774	63.8593	3.6818	1.4837	1.7430	0.4551
Saint Vincent and the Grenadines	60.2076	62.5653	2.3577	0.9638	1.1651	0.2289
Suriname	57.8667	59.6156	1.7488	0.5985	0.1749	0.9755
Trinidad and Tobago	59.8300	60.2389	0.4089	0.3381	0.3678	-0.2970
Andean Latin America	54.5654	63.9898	9.4243	3.4321	0.8503	5.1420
Bolivia	54.2952	62.2950	7.9998	4.0822	1.6871	2.2304
Ecuador	60.6502	63.3924	2.7422	2.0903	0.3790	0.2730

Peru	51.7883	64.9030	13.1146	3.7784	0.7710	8.5653
Central Latin America	59.2825	63.2615	3.9790	2.1360	0.2354	1.6076
Colombia	58.3931	63.1837	4.7906	1.0338	1.2665	2.4903
Costa Rica	65.3653	67.9717	2.6063	0.8296	1.1359	0.6408
El Salvador	57.2726	60.3261	3.0536	2.7153	0.2013	0.1369
Guatemala	50.2418	59.4746	9.2327	4.9906	0.1042	4.1380
Honduras	57.7873	61.5627	3.7754	2.6012	0.3471	0.8271
Mexico	60.7559	63.7740	3.0181	2.3630	-0.3000	0.9551
Nicaragua	41.7830	60.7246	18.9416	2.4734	-0.8506	17.3188
Panama	63.7979	65.7466	1.9487	0.7909	0.7400	0.4179
Venezuela	61.5225	63.2713	1.7487	1.3357	0.6679	-0.2548
Tropical Latin America	57.8768	62.7157	4.8389	2.5458	1.5502	0.7429
Brazil	57.7321	62.7086	4.9765	2.5957	1.6131	0.7677
Paraguay	63.7095	63.0097	-0.6998	1.0786	-1.3842	-0.3942
North Africa and Middle East	56.5999	62.8784	6.2785	2.7631	2.3927	1.1226
Algeria	60.3972	65.5417	5.1445	2.3814	1.9306	0.8324
Bahrain	61.6674	67.1273	5.4599	0.8201	3.9426	0.6972
Egypt	55.0479	60.3275	5.2796	3.7409	1.7843	-0.2456
Iran	55.5811	66.6861	11.1051	2.6866	4.1837	4.2347
Iraq	59.0715	60.9052	1.8336	1.2057	0.5128	0.1151
Jordan	61.4242	66.0106	4.5864	0.8816	2.9026	0.8021
Kuwait	65.2762	68.4975	3.2213	0.6052	0.8449	1.7711
Lebanon	52.7520	66.5439	13.7919	1.1110	2.1048	10.5761
Libya	62.2051	64.3262	2.1210	1.1075	0.8496	0.1640
Morocco	57.8817	63.1057	5.2239	3.1305	1.4120	0.6815
Palestine	59.4550	62.2363	2.7813	1.1852	1.1215	0.4746
Oman	60.2955	63.9627	3.6672	1.6535	0.4987	1.5151
Qatar	65.6987	69.1788	3.4800	0.5705	2.8598	0.0497
Saudi Arabia	61.7674	65.1577	3.3903	1.9044	0.4176	1.0683
Syria	55.5998	59.8334	4.2336	1.8104	2.1273	0.2959
Tunisia	61.4568	65.6251	4.1683	1.9000	1.4131	0.8553
Turkey	56.7092	64.1939	7.4847	3.2971	3.3503	0.8373
United Arab Emirates	62.4970	65.3505	2.8535	0.8236	1.4154	0.6145
Yemen	52.1396	58.6147	6.4751	4.6283	1.5111	0.3357
Sudan	52.1072	58.1785	6.0713	3.8211	1.6829	0.5672
South Asia	50.2129	56.5444	6.3315	5.3560	0.6992	0.2762
Afghanistan	42.8330	48.9259	6.0929	4.6018	0.0500	1.4410
Bangladesh	49.9235	59.4144	9.4910	7.6719	0.6154	1.2037
Bhutan	51.8707	59.9434	8.0727	5.9572	1.0279	1.0876
India	50.0211	56.4622	6.4410	5.3634	0.8787	0.1989
Nepal	50.4005	60.2848	9.8842	8.6052	0.8150	0.4640
Pakistan	54.0274	56.3914	2.3640	3.0938	-0.8109	0.0811

Central Sub-Saharan Africa	43.2352	48.5925	5.3573	5.3638	-0.1663	0.1598
Angola	41.5584	51.2633	9.7049	7.4440	1.0137	1.2472
Central African Republic	37.8282	45.2445	7.4163	6.6318	0.6449	0.1396
Congo	46.6881	52.0353	5.3472	4.4063	0.8282	0.1128
Democratic Republic of the Congo	44.1332	47.8506	3.7174	4.6555	-0.7934	-0.1447
Equatorial Guinea	43.1173	50.2269	7.1096	5.5127	1.4372	0.1597
Gabon	50.1597	47.7110	-2.4487	-1.6971	-0.3647	-0.3869
Eastern Sub-Saharan Africa	43.7162	52.0651	8.3488	6.5696	0.8860	0.8932
Burundi	42.8422	50.9140	8.0718	6.4150	1.8524	-0.1956
Comoros	48.6464	54.3551	5.7088	4.5061	0.7433	0.4593
Djibouti	52.6522	54.9242	2.2720	1.3253	0.7413	0.2054
Eritrea	44.2245	51.9831	7.7587	7.6651	0.6711	-0.5775
Ethiopia	39.2305	53.3238	14.0933	9.9307	1.6159	2.5467
Kenya	53.7133	54.9701	1.2568	0.7962	0.2797	0.1809
Madagascar	47.1386	54.1774	7.0388	5.9409	0.8217	0.2763
Malawi	41.1828	48.5224	7.3396	7.3391	-0.0916	0.0920
Mauritius	59.0317	62.4660	3.4343	1.0818	2.2717	0.0808
Mozambique	42.2222	46.6281	4.4060	3.8295	0.0005	0.5760
Rwanda	42.1682	53.1969	11.0287	8.7256	2.9226	-0.6195
Seychelles	58.6757	62.4205	3.7449	0.7828	1.8964	1.0657
Somalia	44.7866	49.7179	4.9313	3.1166	0.6522	1.1626
Tanzania	48.6546	53.6737	5.0191	4.3836	0.3522	0.2833
Uganda	42.5159	50.6786	8.1627	7.2755	0.5866	0.3007
Zambia	42.8188	50.1789	7.3601	8.6640	-1.2480	-0.0559
South Sudan	42.0066	47.2237	5.2171	4.4907	0.6253	0.1010
Southern Sub-Saharan Africa	52.6795	48.9878	-3.6917	-5.4334	1.6017	0.1400
Botswana	55.7004	53.4493	-2.2512	-3.0273	0.8510	-0.0749
Lesotho	50.1408	40.0152	-10.1256	-7.7597	-1.1763	-1.1896
Namibia	52.1703	49.6810	-2.4893	-1.5642	-0.4952	-0.4300
South Africa	52.9680	50.0683	-2.8997	-5.0760	2.2380	-0.0617
Swaziland	51.7223	41.6326	-10.0897	-8.1910	-1.0654	-0.8332
Zimbabwe	51.5644	46.5701	-4.9943	-6.7337	0.4259	1.3135
Western Sub-Saharan Africa	46.2743	51.6035	5.3292	5.3925	-0.1210	0.0576
Benin	47.2885	55.0662	7.7776	7.6076	-0.1143	0.2843
Burkina Faso	43.7550	53.4398	9.6848	10.2980	-0.5978	-0.0154
Cameroon	49.4927	49.8657	0.3730	0.8016	-0.3933	-0.0352
Cape Verde	57.4711	61.7148	4.2437	2.7829	1.0732	0.3876
Chad	43.6929	48.0062	4.3133	3.9671	-0.4327	0.7789
Cote d'Ivoire	46.6298	50.0053	3.3755	3.5464	-0.1744	0.0034
The Gambia	49.0053	55.1552	6.1500	5.8231	-0.0631	0.3899
Ghana	51.8210	55.9462	4.1252	4.7565	-0.7694	0.1380

Guinea	45.0918	52.3176	7.2258	7.7719	-0.6138	0.0677
Guinea-Bissau	43.0736	45.6497	2.5762	2.4209	-0.4662	0.6215
Liberia	41.9669	53.3480	11.3812	8.1622	-0.1467	3.3656
Mali	42.1300	50.5375	8.4075	8.1805	-0.0769	0.3039
Mauritania	51.6606	55.9685	4.3078	4.5489	-0.3262	0.0851
Niger	39.6607	53.0685	13.4077	12.5190	0.3865	0.5022
Nigeria	46.3679	51.0346	4.6667	4.8331	0.0107	-0.1771
Sao Tome and Principe	55.3687	58.5767	3.2081	3.0523	0.0402	0.1156
Senegal	49.5976	56.5181	6.9205	6.5489	0.2718	0.0998
Sierra Leone	42.1803	48.9208	6.7406	6.8076	-0.1503	0.0833
Togo	49.9708	53.7314	3.7605	2.7239	0.6282	0.4085

Table B2 Health adjusted life expectancy at birth (HALE₀) changes between 1990 and 2013 and the contributions of Communicable, maternal, neonatal, and nutritional diseases (I), Non-communicable diseases (II) and Injuries (III) to these changes for in 187 countries, 21 regions (years, female)

	Contribution of diseases and injuries to HALE ₀ changes					
	HALE ₀			to HALE ₀ changes		
	1990	2013	changes	I	II	III
Global	58.4003	64.1310	5.7307	3.2405	1.7852	0.7050
Developing countries	56.1184	62.5653	6.4469	3.9769	1.7532	0.7169
Developed countries	67.3685	70.3062	2.9377	0.3375	2.0457	0.5546
East Asia	62.0083	70.2448	8.2365	3.2195	3.9363	1.0808
China	61.9491	70.3191	8.3700	3.2764	3.9954	1.0982
North Korea	61.2404	65.4028	4.1624	1.9192	1.6111	0.6321
Southeast Asia	59.4391	65.7603	6.3212	4.5918	0.4701	1.2593
Cambodia	47.1184	60.1816	13.0632	7.2927	0.2649	5.5056
Indonesia	58.9900	64.4665	5.4765	5.6859	-0.5241	0.3146
Laos	49.8661	59.5367	9.6706	9.2084	0.2178	0.2444
Malaysia	65.9469	68.8466	2.8997	1.1571	1.6967	0.0458
Maldives	57.7537	70.9335	13.1798	4.8484	5.8536	2.4778
Myanmar	52.5295	61.8063	9.2767	7.4509	1.3690	0.4569
Philippines	62.2378	64.5191	2.2814	2.9082	-1.3269	0.7000
Sri Lanka	66.0268	70.5669	4.5401	2.7187	0.7001	1.1213
Thailand	66.0372	69.1425	3.1053	1.9837	1.0515	0.0701
Timor-Leste	52.3413	64.4980	12.1568	10.4864	1.3467	0.3237
Vietnam	58.7031	69.2712	10.5681	3.4622	2.2739	4.8320
Oceania	52.5754	55.7959	3.2205	3.1274	0.1315	-0.0384
Fiji	59.4600	60.5664	1.1064	1.4552	-0.1548	-0.1940
Kiribati	53.2371	58.4959	5.2587	4.7268	0.6064	-0.0745
Marshall Islands	59.7618	59.7761	0.0144	1.8200	-1.7265	-0.0792
Federated States of Micronesia	57.7277	61.7278	4.0002	3.3356	0.5342	0.1304

Papua New Guinea	50.3491	54.4071	4.0580	3.7482	0.3263	-0.0165
Samoa	63.7405	64.6754	0.9349	1.4033	-0.4461	-0.0223
Solomon Islands	55.2546	58.2595	3.0049	3.4577	-0.3798	-0.0730
Tonga	62.4327	64.7444	2.3117	1.1945	0.9922	0.1250
Vanuatu	57.8457	59.6678	1.8220	2.0612	-0.1050	-0.1342
Central Asia	61.5911	64.5433	2.9522	1.9612	0.6197	0.3713
Armenia	64.4207	67.7072	3.2865	1.7828	0.7546	0.7491
Azerbaijan	61.0950	65.7062	4.6113	2.7917	1.5830	0.2366
Georgia	65.1883	68.2359	3.0476	1.2160	1.5121	0.3195
Kazakhstan	62.4778	64.1811	1.7033	1.1402	0.2624	0.3007
Kyrgyzstan	60.6918	64.0446	3.3528	2.6353	0.1216	0.5959
Mongolia	56.9777	61.5627	4.5851	3.9579	0.5424	0.0847
Tajikistan	59.3375	64.0240	4.6865	3.4947	0.9434	0.2484
Turkmenistan	58.6394	63.1559	4.5165	3.0157	0.9698	0.5310
Uzbekistan	61.8564	64.1599	2.3035	1.5883	0.3354	0.3797
Central Europe	65.3088	69.5523	4.2435	0.7934	2.8514	0.5987
Albania	65.7083	68.5744	2.8662	1.7698	0.7342	0.3622
Bosnia and Herzegovina	66.8361	70.0056	3.1695	1.0430	2.0984	0.0281
Bulgaria	65.1686	67.6860	2.5174	0.5301	1.4319	0.5554
Croatia	66.9820	70.5798	3.5978	0.4203	2.5313	0.6462
Czech Republic	65.5299	69.9246	4.3947	0.3162	3.1783	0.9003
Hungary	64.3116	68.8370	4.5254	0.5377	2.9316	1.0561
Macedonia	65.4690	68.9476	3.4786	1.5434	1.2507	0.6845
Montenegro	66.8024	68.3827	1.5803	0.6326	0.4151	0.5327
Poland	65.7014	70.4927	4.7912	0.6437	3.5093	0.6382
Romania	64.1169	68.7238	4.6069	1.2681	3.1652	0.1736
Serbia	66.8490	69.6834	2.8344	0.6403	1.6252	0.5689
Slovakia	65.8488	69.4016	3.5528	0.5701	2.3347	0.6481
Slovenia	66.9180	71.3082	4.3902	0.3414	3.1255	0.9233
Eastern Europe	65.0251	66.9090	1.8839	0.3567	1.0373	0.4900
Belarus	65.9629	66.7625	0.7996	0.5227	0.1518	0.1250
Estonia	65.5869	70.4135	4.8267	0.6656	3.2293	0.9317
Latvia	65.9081	70.0487	4.1405	0.3857	2.7829	0.9720
Lithuania	66.6275	69.7531	3.1256	0.2439	2.2283	0.6535
Moldova	62.5587	66.3948	3.8361	0.7664	2.3168	0.7529
Russia	64.9599	66.8300	1.8701	0.4153	0.9062	0.5485
Ukraine	65.1023	66.8309	1.7286	0.1143	1.2539	0.3604
High-income Asia Pacific	71.5512	75.5549	4.0037	0.3740	3.1346	0.4951
Brunei	67.0731	70.9079	3.8349	0.2469	3.0972	0.4908
Japan	72.9279	76.5224	3.5945	0.2952	2.8454	0.4538
South Korea	66.4398	72.0059	5.5661	0.5449	4.4973	0.5239
Singapore	68.4466	73.3133	4.8668	0.6504	3.7495	0.4668

Australasia	68.0908	70.9167	2.8259	0.1718	2.2524	0.4017
Australia	68.2398	70.9539	2.7141	0.1092	2.2183	0.3866
New Zealand	67.3876	70.7416	3.3541	0.4421	2.4429	0.4691
Western Europe	68.0697	71.3545	3.2847	0.2671	2.3119	0.7057
Andorra	70.9499	73.3319	2.3820	0.2399	1.5128	0.6293
Austria	68.1671	71.2376	3.0705	0.1938	2.0453	0.8314
Belgium	67.7756	70.6366	2.8609	0.1350	2.0682	0.6578
Cyprus	69.2966	72.1799	2.8832	0.4755	1.5631	0.8447
Denmark	66.9864	70.1519	3.1655	0.1714	2.0445	0.9496
Finland	67.4678	71.1290	3.6612	0.4942	2.4552	0.7118
France	69.9091	72.9522	3.0431	0.3414	1.6559	1.0459
Germany	66.8903	70.4141	3.5238	0.1660	2.7417	0.6161
Greece	68.3708	70.7013	2.3305	0.2626	1.5088	0.5591
Iceland	68.5479	72.8437	4.2958	0.8067	2.8181	0.6710
Ireland	66.9286	70.7602	3.8316	0.3867	2.9172	0.5277
Israel	67.4647	71.6637	4.1990	0.3032	3.1782	0.7176
Italy	68.4499	71.9490	3.4991	0.3484	2.4233	0.7275
Luxembourg	67.2498	71.1224	3.8726	0.1373	2.9768	0.7585
Malta	67.8552	71.1204	3.2651	0.1714	2.5562	0.5375
Netherlands	68.5609	70.3235	1.7627	0.0306	1.3029	0.4292
Norway	68.7925	71.6458	2.8533	0.4291	1.7631	0.6611
Portugal	67.0506	71.3118	4.2613	0.3042	3.2741	0.6829
Spain	69.2075	72.2836	3.0760	0.2132	2.1565	0.7063
Sweden	68.4586	70.8969	2.4383	0.3148	1.3535	0.7700
Switzerland	68.2244	71.4657	3.2413	0.2819	1.6353	1.3241
United Kingdom	67.4076	70.6437	3.2361	0.2795	2.3933	0.5632
Southern Latin America	66.6760	69.7748	3.0988	0.6977	1.9048	0.4963
Argentina	66.5597	69.3994	2.8397	0.5671	1.7558	0.5168
Chile	66.7517	70.7264	3.9747	1.2455	2.2703	0.4590
Uruguay	66.9584	69.9835	3.0251	0.6015	2.0929	0.3307
High-income North America	67.3809	68.9803	1.5994	0.2658	0.9898	0.3438
Canada	69.0830	71.3189	2.2359	0.1632	1.5815	0.4911
United States	67.2057	68.7213	1.5156	0.2756	0.9086	0.3315
Caribbean	59.9231	64.0411	4.1180	2.8950	1.0307	0.1923
Antigua and Barbuda	65.4350	67.2598	1.8249	0.4946	1.2088	0.1214
The Bahamas	62.6045	65.1735	2.5690	1.1658	1.2022	0.2010
Barbados	65.4909	66.7322	1.2413	0.6017	0.5388	0.1008
Belize	64.3802	63.1038	-1.2763	1.0577	-2.2553	-0.0788
Cuba	66.3659	69.0207	2.6548	0.4584	1.5208	0.6755
Dominica	63.3315	67.4339	4.1024	0.9570	2.7929	0.3525
Dominican Republic	63.8805	66.3525	2.4720	2.4007	0.0304	0.0409
Grenada	62.7378	64.2642	1.5264	1.2172	0.2159	0.0934

Guyana	59.3507	58.6489	-0.7018	0.8574	-1.3668	-0.1924
Haiti	48.4963	56.6430	8.1467	6.9710	1.3089	-0.1332
Jamaica	65.2401	66.2020	0.9620	0.6782	0.3055	-0.0217
Saint Lucia	62.5896	66.5208	3.9312	1.5230	2.1966	0.2115
Saint Vincent and the Grenadines	62.4800	64.9050	2.4249	1.0754	1.1856	0.1639
Suriname	61.1835	63.4428	2.2593	0.9850	0.3584	0.9159
Trinidad and Tobago	63.4184	65.4055	1.9871	0.6239	1.1915	0.1717
Andean Latin America	58.8820	66.4622	7.5802	3.9561	0.9610	2.6631
Bolivia	55.4744	63.3579	7.8835	4.9267	1.3722	1.5846
Ecuador	63.8775	67.3238	3.4463	2.6884	0.6161	0.1417
Peru	57.8132	67.1525	9.3393	4.1768	0.9792	4.1833
Central Latin America	64.2406	67.4800	3.2394	2.3069	0.3197	0.6127
Colombia	64.3535	67.5016	3.1481	1.1711	1.2677	0.7092
Costa Rica	67.8594	70.1022	2.2428	0.8438	1.1408	0.2583
El Salvador	62.9866	66.7909	3.8042	2.7512	-0.2006	1.2536
Guatemala	56.6012	64.4888	7.8876	6.2455	0.1212	1.5209
Honduras	60.4597	63.7828	3.3230	2.8302	0.3160	0.1768
Mexico	65.1412	67.7619	2.6207	2.4751	-0.1789	0.3246
Nicaragua	56.8808	67.3178	10.4370	3.1115	0.1016	7.2240
Panama	67.0257	69.3398	2.3141	0.8781	1.1301	0.3059
Venezuela	65.6052	68.1659	2.5608	1.4161	0.9721	0.1726
Tropical Latin America	62.7692	66.9869	4.2177	2.2770	1.5892	0.3514
Brazil	62.6969	67.0184	4.3215	2.3161	1.6431	0.3623
Paraguay	65.3279	65.9296	0.6018	1.2889	-0.6596	-0.0276
North Africa and Middle East	59.0739	64.9502	5.8763	2.9637	2.2329	0.6797
Algeria	61.8149	66.2831	4.4682	2.4688	1.5464	0.4531
Bahrain	61.6728	66.8228	5.1500	0.9064	3.8710	0.3726
Egypt	57.1605	62.8888	5.7283	4.1330	1.6383	-0.0430
Iran	59.1146	68.1783	9.0636	2.6998	3.6458	2.7181
Iraq	59.7475	61.8644	2.1169	1.4203	0.2903	0.4063
Jordan	62.2888	66.8422	4.5533	1.1667	2.9104	0.4762
Kuwait	67.0321	69.5344	2.5023	0.4905	1.2148	0.7969
Lebanon	57.7704	68.4835	10.7131	1.1233	2.1054	7.4844
Libya	63.4883	65.7052	2.2169	1.1254	0.9920	0.0995
Morocco	60.4207	65.3123	4.8916	3.3090	1.2020	0.3806
Palestine	61.5201	65.8784	4.3583	1.3682	2.5259	0.4642
Oman	60.7125	65.9394	5.2269	2.2690	1.7425	1.2155
Qatar	65.3607	69.4094	4.0487	0.6511	3.1295	0.2680
Saudi Arabia	63.3850	67.2454	3.8605	2.0207	1.1554	0.6844
Syria	59.7818	63.5237	3.7419	1.9533	3.1383	-1.3496
Tunisia	64.5365	69.0327	4.4962	1.9178	2.0072	0.5711
Turkey	60.5627	67.5902	7.0275	3.3831	3.1323	0.5121

United Arab Emirates	63.4164	67.5021	4.0857	1.0784	2.4370	0.5702
Yemen	52.2379	57.9403	5.7025	5.0188	0.5135	0.1701
Sudan	52.8162	59.9768	7.1606	4.5908	2.0122	0.5577
South Asia	50.3127	58.8566	8.5438	6.5421	1.3919	0.6099
Afghanistan	43.0400	48.6656	5.6256	5.2979	-0.3511	0.6788
Bangladesh	49.9910	60.3216	10.3305	8.6837	0.8177	0.8292
Bhutan	51.6531	61.6005	9.9474	7.4412	1.6072	0.8991
India	50.1108	59.0581	8.9473	6.6312	1.6937	0.6224
Nepal	51.0686	62.4565	11.3879	10.2170	0.6712	0.4998
Pakistan	53.5517	57.8158	4.2642	4.1503	-0.0921	0.2059
Central Sub-Saharan Africa	45.6954	51.0741	5.3786	4.7666	0.3472	0.2649
Angola	44.5678	53.2024	8.6346	7.3139	0.4645	0.8562
Central African Republic	43.2759	46.3933	3.1174	2.8391	0.2516	0.0267
Congo	50.1767	54.9627	4.7860	3.2992	1.2389	0.2479
Democratic Republic of the Congo	45.7961	50.4209	4.6248	4.2197	0.2669	0.1382
Equatorial Guinea	46.4215	52.1333	5.7118	5.0336	0.9212	-0.2429
Gabon	54.5890	55.6711	1.0821	1.4543	-0.3911	0.0189
Eastern Sub-Saharan Africa	46.0844	53.9290	7.8446	6.1726	0.9441	0.7279
Burundi	43.4501	53.2135	9.7634	7.9022	1.8539	0.0073
Comoros	50.4381	57.0366	6.5985	5.2619	0.8323	0.5043
Djibouti	52.5216	55.5767	3.0550	1.8150	1.0216	0.2185
Eritrea	46.6959	54.6421	7.9462	7.8529	0.4047	-0.3114
Ethiopia	42.2951	55.2261	12.9310	9.9704	1.3282	1.6324
Kenya	55.5438	58.1612	2.6175	1.5103	0.9544	0.1528
Madagascar	49.3751	56.4813	7.1062	6.1149	0.7245	0.2667
Malawi	43.0330	50.6430	7.6100	6.7272	0.6051	0.2777
Mauritius	65.3346	68.2788	2.9443	1.1877	1.6065	0.1501
Mozambique	45.2452	49.4325	4.1873	3.3091	0.4213	0.4569
Rwanda	44.7917	57.3886	12.5969	9.0293	3.8459	-0.2783
Seychelles	65.6970	67.7582	2.0612	0.8090	1.2243	0.0279
Somalia	45.6046	50.5500	4.9455	3.3910	0.7704	0.7841
Tanzania	49.7674	54.1402	4.3728	3.8019	0.4489	0.1220
Uganda	43.8127	52.0446	8.2318	5.8421	0.9211	1.4687
Zambia	44.5966	48.0657	3.4691	3.8759	-0.4912	0.0844
South Sudan	46.1435	51.0879	4.9444	4.3609	0.4343	0.1491
Southern Sub-Saharan Africa	58.2576	52.6360	-5.6216	-6.9021	1.0388	0.2416
Botswana	60.6747	59.2421	-1.4325	-4.6261	2.9496	0.2439
Lesotho	56.5167	43.9381	-12.5787	-10.8792	-1.0807	-0.6188
Namibia	56.7857	56.3379	-0.4478	-0.3807	-0.0850	0.0180
South Africa	59.1692	53.8128	-5.3564	-6.6958	1.2182	0.1211
Swaziland	55.8907	46.2945	-9.5962	-8.5800	-0.6379	-0.3783

Zimbabwe	54.7362	49.2231	-5.5131	-7.5208	1.0692	0.9385
Western Sub-Saharan Africa	47.3502	52.5183	5.1681	5.0808	0.0707	0.0166
Benin	49.7241	57.8057	8.0816	7.7439	0.1740	0.1637
Burkina Faso	45.7286	54.4598	8.7313	8.7450	-0.1653	0.1516
Cameroon	51.0868	52.0695	0.9827	0.6263	0.3324	0.0240
Cape Verde	62.1348	67.3505	5.2157	2.6582	2.3554	0.2021
Chad	46.3315	49.9627	3.6313	3.2758	-0.1412	0.4967
Cote d'Ivoire	49.8083	52.5775	2.7692	3.0288	-0.2656	0.0059
The Gambia	50.3198	56.9469	6.6272	6.2965	0.1483	0.1824
Ghana	52.4408	57.8293	5.3885	4.8228	0.2906	0.2751
Guinea	44.4123	52.3247	7.9124	8.0621	-0.1818	0.0320
Guinea-Bissau	44.6486	46.3645	1.7159	1.7944	-0.2963	0.2178
Liberia	43.7618	53.7027	9.9409	7.8137	0.0519	2.0752
Mali	41.4944	49.1448	7.6504	7.6165	-0.0732	0.1071
Mauritania	51.9178	56.8893	4.9715	5.1237	-0.1729	0.0206
Niger	40.8251	54.2387	13.4136	12.6029	0.5515	0.2592
Nigeria	46.9424	51.2258	4.2834	4.4365	0.0255	-0.1787
Sao Tome and Principe	56.1706	60.2895	4.1189	4.0075	0.0164	0.0950
Senegal	51.1539	57.6298	6.4758	6.4508	-0.0712	0.0962
Sierra Leone	45.6794	51.5515	5.8721	6.0246	-0.0611	-0.0914
Togo	51.1821	55.5647	4.3826	2.9898	1.1490	0.2439

Table B3 Health adjusted life expectancy at birth (HALE₀) changes between 1990 and 2013 and the contributions of Communicable, maternal, neonatal, and nutritional diseases (I), Non-communicable diseases (II) and Injuries (III) to these changes for in 187 countries, 21 regions (years, both sexes)

	Contribution of diseases and injuries to HALE ₀ changes					
	HALE ₀					
	1990	2013	changes	I	II	III
Global	56.7910	62.2841	5.4932	3.0987	1.6473	0.7472
Developing countries	54.9594	60.9003	5.9409	3.7642	1.4527	0.7240
Developed countries	64.8126	68.2680	3.4554	0.3850	2.2840	0.7864
East Asia	60.5765	67.8680	7.2915	3.1145	3.0943	1.0827
China	60.5138	67.9080	7.3942	3.1663	3.1305	1.0973
North Korea	60.3649	63.5418	3.1769	1.8600	0.8545	0.4624
Southeast Asia	57.6136	63.5066	5.8931	4.1758	0.4490	1.2683
Cambodia	43.5365	57.4654	13.9289	6.6220	0.1803	7.1266
Indonesia	57.5738	62.8476	5.2738	5.1077	-0.3080	0.4741
Laos	48.6546	57.9192	9.2646	8.6774	0.2830	0.3042
Malaysia	64.0599	66.2936	2.2337	1.0116	1.1351	0.0870
Maldives	58.0018	69.6215	11.6197	4.3648	4.8817	2.3732

Myanmar	51.0692	59.5842	8.5150	6.8319	1.0761	0.6070
Philippines	58.4512	61.5182	3.0670	2.8434	-1.1314	1.3550
Sri Lanka	62.5719	67.2310	4.6592	2.6109	0.5438	1.5044
Thailand	63.6574	66.6454	2.9879	1.9161	1.1018	-0.0300
Timor-Leste	51.8123	63.0330	11.2206	9.8793	1.0236	0.3178
Vietnam	57.1249	66.5451	9.4201	3.1818	2.1513	4.0870
Oceania	51.6962	54.8536	3.1574	2.8354	0.3800	-0.0581
Fiji	57.2921	59.1091	1.8170	1.4207	0.6314	-0.2351
Kiribati	51.2886	55.1625	3.8740	4.1217	-0.1129	-0.1348
Marshall Islands	57.4817	57.9623	0.4807	1.7623	-1.2659	-0.0157
Federated States of Micronesia	55.9134	59.9391	4.0257	3.1704	0.6848	0.1705
Papua New Guinea	49.7707	53.5968	3.8261	3.3928	0.4684	-0.0351
Samoa	61.3041	64.1380	2.8339	1.6700	0.9626	0.2013
Solomon Islands	54.3811	57.3343	2.9531	3.1195	-0.1200	-0.0464
Tonga	61.2958	62.7478	1.4520	0.9830	0.3478	0.1212
Vanuatu	56.2375	58.0569	1.8194	1.9019	0.0333	-0.1158
Central Asia	58.8585	61.5498	2.6912	1.8574	0.2894	0.5445
Armenia	61.8127	65.1104	3.2977	1.7778	0.5556	0.9643
Azerbaijan	58.4451	63.4065	4.9614	2.8189	1.4934	0.6490
Georgia	62.0819	64.2994	2.2175	1.2762	0.3049	0.6365
Kazakhstan	58.9986	60.1716	1.1731	0.9569	-0.1456	0.3618
Kyrgyzstan	57.8372	60.8997	3.0626	2.4535	-0.2808	0.8899
Mongolia	54.9693	57.8719	2.9027	3.6148	-0.5065	-0.2056
Tajikistan	57.4364	62.0564	4.6201	3.4057	0.7481	0.4663
Turkmenistan	56.1139	60.0570	3.9431	2.8393	0.4040	0.6998
Uzbekistan	59.7631	61.8022	2.0391	1.4721	0.1618	0.4052
Central Europe	62.2307	66.9585	4.7279	0.8591	2.9697	0.8992
Albania	63.6634	66.0258	2.3623	1.7473	0.1681	0.4469
Bosnia and Herzegovina	64.0687	67.5925	3.5238	1.0785	2.1200	0.3253
Bulgaria	62.5082	65.1927	2.6845	0.5340	1.3662	0.7843
Croatia	63.9708	68.0550	4.0842	0.4938	2.6202	0.9702
Czech Republic	62.5355	67.8349	5.2994	0.3573	3.9092	1.0328
Hungary	60.9616	66.3157	5.3541	0.6448	3.3610	1.3482
Macedonia	63.4874	66.9641	3.4767	1.6319	0.9802	0.8646
Montenegro	64.2312	66.1980	1.9668	0.7022	0.8087	0.4559
Poland	62.1069	67.2526	5.1457	0.7029	3.5887	0.8542
Romania	61.3345	66.3753	5.0408	1.3568	2.9195	0.7646
Serbia	64.3545	67.9700	3.6155	0.7507	1.8306	1.0342
Slovakia	62.2394	66.6901	4.4507	0.6079	2.8571	0.9857
Slovenia	63.9487	69.0874	5.1388	0.3688	3.4494	1.3206
Eastern Europe	61.4330	63.1040	1.6711	0.2139	0.6709	0.7863
Belarus	62.4757	62.2811	-0.1946	0.4084	-0.6597	0.0566

Estonia	61.9981	67.2900	5.2919	0.6906	2.8598	1.7415
Latvia	62.0063	66.5895	4.5831	0.4373	2.4522	1.6936
Lithuania	62.9708	66.0853	3.1145	0.2719	1.7474	1.0952
Moldova	60.1651	63.3872	3.2221	0.6369	1.5630	1.0222
Russia	61.2928	62.9860	1.6931	0.2698	0.5724	0.8510
Ukraine	61.6390	63.2086	1.5696	-0.0512	0.9385	0.6824
High-income Asia Pacific	69.0580	73.2413	4.1833	0.4535	3.0556	0.6742
Brunei	65.9650	69.7705	3.8056	0.0703	2.9844	0.7509
Japan	70.6443	74.1064	3.4622	0.3717	2.5758	0.5147
South Korea	63.4393	70.1660	6.7267	0.6643	5.0730	0.9893
Singapore	66.7824	72.0358	5.2534	0.6243	3.9553	0.6738
Australasia	66.0702	69.7660	3.6958	0.2318	2.7891	0.6749
Australia	66.2208	69.8067	3.5859	0.1840	2.7497	0.6522
New Zealand	65.3512	69.5730	4.2217	0.4390	3.0051	0.7777
Western Europe	65.8863	69.8931	4.0068	0.3277	2.7956	0.8836
Andorra	68.9991	71.6457	2.6466	0.2491	1.6731	0.7244
Austria	65.9379	70.0180	4.0801	0.2345	2.6989	1.1467
Belgium	65.4211	68.9524	3.5313	0.1868	2.5404	0.8042
Cyprus	67.1113	70.6250	3.5137	0.5036	1.7461	1.2640
Denmark	65.0931	69.0070	3.9140	0.2191	2.5294	1.1654
Finland	64.4897	68.9266	4.4369	0.4845	2.8663	1.0861
France	66.9971	70.8462	3.8491	0.4325	2.2537	1.1628
Germany	64.7447	68.9749	4.2302	0.2387	3.1551	0.8364
Greece	66.8329	69.2816	2.4487	0.2818	1.4813	0.6856
Iceland	67.2609	71.5339	4.2730	0.6400	2.7072	0.9257
Ireland	65.0689	69.4841	4.4152	0.3847	3.3235	0.7070
Israel	66.3429	70.5823	4.2394	0.3071	3.1670	0.7653
Italy	66.5303	70.7263	4.1960	0.4036	2.9285	0.8639
Luxembourg	64.9321	70.0177	5.0856	0.2428	3.8735	0.9694
Malta	66.4807	69.9482	3.4675	0.2032	2.6701	0.5943
Netherlands	66.5869	69.4518	2.8649	0.0830	2.3101	0.4718
Norway	66.4898	70.1276	3.6379	0.4019	2.4046	0.8313
Portugal	64.4400	69.1068	4.6667	0.3306	3.1749	1.1613
Spain	66.5904	70.4924	3.9021	0.3987	2.5627	0.9406
Sweden	66.6042	69.7120	3.1078	0.3208	1.8831	0.9038
Switzerland	65.9640	70.2191	4.2551	0.3471	2.3236	1.5844
United Kingdom	65.6369	69.6621	4.0253	0.3026	3.0564	0.6662
Southern Latin America	63.9787	67.4045	3.4258	0.7392	2.0134	0.6732
Argentina	63.8547	66.7809	2.9262	0.5907	1.7694	0.5661
Chile	64.2092	69.0324	4.8232	1.3404	2.5187	0.9641
Uruguay	64.1616	67.3936	3.2320	0.6356	2.0845	0.5119
High-income North America	65.1896	67.6425	2.4529	0.4182	1.4841	0.5507

Canada	67.1336	70.3817	3.2481	0.2512	2.3347	0.6622
United States	64.9828	67.3380	2.3553	0.4347	1.3805	0.5401
Caribbean	58.9853	62.9288	3.9435	2.9624	0.7720	0.2091
Antigua and Barbuda	63.6673	65.8174	2.1501	0.4573	1.4274	0.2655
The Bahamas	60.3884	63.4615	3.0732	1.2097	1.4220	0.4414
Barbados	64.0127	65.9543	1.9416	0.6737	0.9982	0.2696
Belize	62.9729	61.6090	-1.3639	0.9151	-1.9480	-0.3310
Cuba	65.3392	68.1282	2.7890	0.4669	1.3208	1.0013
Dominica	62.1944	64.9499	2.7555	0.8457	1.3090	0.6008
Dominican Republic	62.4673	64.5790	2.1117	2.3779	-0.2217	-0.0445
Grenada	61.4656	62.7999	1.3344	1.1869	0.1098	0.0377
Guyana	57.1524	56.6424	-0.5100	0.6486	-0.8429	-0.3157
Haiti	47.9943	56.0868	8.0925	7.3527	1.0246	-0.2848
Jamaica	65.1428	65.8860	0.7432	0.6844	0.1881	-0.1293
Saint Lucia	61.3764	65.1763	3.7999	1.5063	1.9586	0.3349
Saint Vincent and the Grenadines	61.3630	63.7013	2.3383	1.0112	1.1543	0.1728
Suriname	59.4703	61.4806	2.0103	0.7845	0.2604	0.9653
Trinidad and Tobago	61.5666	62.6639	1.0973	0.4700	0.7126	-0.0853
Andean Latin America	56.7104	65.2241	8.5137	3.6905	0.8648	3.9584
Bolivia	54.8893	62.8304	7.9411	4.5106	1.5286	1.9018
Ecuador	62.2109	65.2872	3.0763	2.3748	0.4883	0.2132
Peru	54.7925	66.0471	11.2546	3.9828	0.7939	6.4779
Central Latin America	61.7195	65.3693	3.6498	2.2268	0.2720	1.1510
Colombia	61.3043	65.3357	4.0314	1.1049	1.2795	1.6470
Costa Rica	66.5747	69.0136	2.4389	0.8374	1.1450	0.4565
El Salvador	60.1292	63.6786	3.5495	2.7565	0.0328	0.7602
Guatemala	53.2759	62.0192	8.7433	5.5966	0.0893	3.0575
Honduras	59.0984	62.6525	3.5540	2.7161	0.3183	0.5196
Mexico	62.9244	65.7928	2.8684	2.4279	-0.2406	0.6810
Nicaragua	49.3273	63.9813	14.6540	2.7955	-0.5223	12.3808
Panama	65.3423	67.4695	2.1271	0.8355	0.9307	0.3610
Venezuela	63.5101	65.6243	2.1141	1.3751	0.7957	-0.0566
Tropical Latin America	60.2390	64.8339	4.5949	2.4297	1.6031	0.5621
Brazil	60.1279	64.8475	4.7196	2.4751	1.6640	0.5805
Paraguay	64.5201	64.4158	-0.1042	1.1775	-1.0588	-0.2229
North Africa and Middle East	57.8031	63.8941	6.0910	2.8612	2.3243	0.9056
Algeria	61.1141	65.9070	4.7928	2.4222	1.7339	0.6367
Bahrain	61.7077	67.0268	5.3191	0.8556	3.9201	0.5433
Egypt	56.1099	61.5748	5.4649	3.9322	1.6873	-0.1546
Iran	57.2018	67.4086	10.2068	2.6931	3.9633	3.5504
Iraq	59.4127	61.3799	1.9672	1.3165	0.3753	0.2754
Jordan	61.8332	66.4139	4.5806	1.0110	2.8998	0.6698

Kuwait	66.0210	68.9337	2.9127	0.5517	1.0190	1.3420
Lebanon	55.1932	67.4528	12.2596	1.1213	2.0138	9.1244
Libya	62.8169	65.0015	2.1845	1.1027	0.9026	0.1791
Morocco	59.1867	64.2372	5.0506	3.2190	1.3007	0.5308
Palestine	60.4865	63.9615	3.4751	1.2701	1.7394	0.4656
Oman	60.5227	64.7765	4.2538	1.9131	1.0302	1.3104
Qatar	65.6356	69.3031	3.6676	0.5946	2.9815	0.0916
Saudi Arabia	62.4802	66.0708	3.5907	1.9307	0.7430	0.9169
Syria	57.5784	61.5339	3.9555	1.8778	2.5399	-0.4622
Tunisia	62.9224	67.2904	4.3680	1.9115	1.7267	0.7299
Turkey	58.5735	65.9038	7.3303	3.3452	3.3088	0.6763
United Arab Emirates	62.8598	66.0129	3.1531	0.8690	1.6994	0.5847
Yemen	52.1575	58.2375	6.0800	4.8522	1.0043	0.2236
Sudan	52.4579	59.0630	6.6051	4.1999	1.8425	0.5627
South Asia	50.2450	57.6323	7.3873	5.9197	1.0305	0.4370
Afghanistan	42.9526	48.7890	5.8365	4.9300	-0.1764	1.0829
Bangladesh	49.9492	59.8425	9.8934	8.1379	0.7206	1.0348
Bhutan	51.7497	60.6466	8.8970	6.6558	1.2669	0.9743
India	50.0498	57.6814	7.6317	5.9667	1.2672	0.3977
Nepal	50.7434	61.3763	10.6329	9.3900	0.7422	0.5007
Pakistan	53.7818	57.0522	3.2704	3.6036	-0.4910	0.1578
Central Sub-Saharan Africa	44.4674	49.8193	5.3519	5.0678	0.0801	0.2039
Angola	43.0272	52.2332	9.2060	7.3964	0.7507	1.0589
Central African Republic	40.3735	45.8317	5.4581	4.9119	0.4668	0.0795
Congo	48.3575	53.4368	5.0793	3.8957	1.0138	0.1698
Democratic Republic of the Congo	44.9597	49.1227	4.1630	4.4297	-0.2543	-0.0124
Equatorial Guinea	44.6446	51.0772	6.4326	5.2702	1.1883	-0.0259
Gabon	52.3223	51.2151	-1.1072	-0.4411	-0.4260	-0.2401
Eastern Sub-Saharan Africa	44.8875	52.9936	8.1061	6.3816	0.9125	0.8120
Burundi	43.1501	52.0456	8.8956	7.1452	1.8612	-0.1108
Comoros	49.5424	55.6665	6.1241	4.8654	0.7838	0.4749
Djibouti	52.5628	55.2423	2.6795	1.5748	0.8942	0.2105
Eritrea	45.4665	53.3402	7.8737	7.7906	0.5308	-0.4477
Ethiopia	40.7174	54.2626	13.5451	9.9603	1.4697	2.1151
Kenya	54.6180	56.5337	1.9157	1.1513	0.5986	0.1658
Madagascar	48.2201	55.3213	7.1012	6.0440	0.7816	0.2756
Malawi	42.0899	49.5783	7.4884	7.0571	0.2620	0.1693
Mauritius	62.0577	65.2699	3.2122	1.1346	1.9715	0.1061
Mozambique	43.7690	48.0548	4.2858	3.6057	0.1803	0.4998
Rwanda	43.4655	55.3127	11.8472	8.8978	3.3875	-0.4381
Seychelles	62.0081	64.9838	2.9757	0.7908	1.6047	0.5803

Somalia	45.1717	50.1269	4.9552	3.2629	0.7182	0.9741
Tanzania	49.2099	53.9150	4.7050	4.1032	0.4065	0.1954
Uganda	43.1479	51.3391	8.1911	6.5643	0.7299	0.8969
Zambia	43.4988	49.0563	5.5574	6.2504	-0.7188	0.0259
South Sudan	43.9854	49.0568	5.0714	4.4239	0.5297	0.1178
Southern Sub-Saharan Africa	55.3889	50.8562	-4.5327	-6.1189	1.3975	0.1887
Botswana	58.2298	56.1900	-2.0398	-3.8079	1.7405	0.0276
Lesotho	53.2611	41.9616	-11.2995	-9.2186	-1.0924	-0.9885
Namibia	54.4411	52.9076	-1.5335	-1.0099	-0.3028	-0.2209
South Africa	55.9565	52.0008	-3.9556	-5.8252	1.8489	0.0206
Swaziland	53.8554	43.8368	-10.0186	-8.4318	-0.8819	-0.7049
Zimbabwe	53.1345	47.8938	-5.2406	-7.1052	0.7034	1.1612
Western Sub-Saharan Africa	46.8047	52.0596	5.2549	5.2439	-0.0234	0.0344
Benin	48.5606	56.4249	7.8642	7.6746	-0.0104	0.2001
Burkina Faso	44.7883	54.0020	9.2136	9.5312	-0.3764	0.0588
Cameroon	50.2910	50.9407	0.6497	0.7141	-0.0498	-0.0146
Cape Verde	59.8871	64.5496	4.6625	2.7414	1.6657	0.2554
Chad	45.0078	48.9807	3.9730	3.6386	-0.3021	0.6364
Cote d'Ivoire	48.0315	51.1509	3.1193	3.2906	-0.1975	0.0263
The Gambia	49.6195	56.0170	6.3975	6.0567	0.0292	0.3116
Ghana	52.1285	56.8882	4.7597	4.7951	-0.2525	0.2172
Guinea	44.7208	52.3248	7.6041	7.9460	-0.3850	0.0430
Guinea-Bissau	43.8612	46.0058	2.1446	2.1095	-0.3844	0.4195
Liberia	42.8471	53.5267	10.6795	8.0018	-0.0635	2.7412
Mali	41.7656	49.7906	8.0250	7.9121	-0.0788	0.1917
Mauritania	51.7720	56.4323	4.6602	4.8652	-0.2441	0.0391
Niger	40.2394	53.6158	13.3764	12.5479	0.4628	0.3657
Nigeria	46.6370	51.1340	4.4970	4.6500	0.0335	-0.1865
Sao Tome and Principe	55.7594	59.4552	3.6958	3.5604	0.0303	0.1052
Senegal	50.3653	57.0895	6.7242	6.5093	0.1014	0.1135
Sierra Leone	43.8348	50.1929	6.3581	6.4531	-0.0932	-0.0019
Togo	50.5872	54.6625	4.0753	2.8602	0.8869	0.3282

Appendix C: Equations used to compute and decompose changes in health adjusted life expectancy

Life table Construction

The life table techniques¹ were used to compute life expectancy, person years lived, number of survivors and other indicators, which were also inputs in further analyses. For simplicity, we didn't include superscripts indicating time points, i.e., t and t+i, in the following equations.

${}_n m_x$, mortality for 0-6 days, 7-27 days, 28-365 days, 1-4 years, 5-9 years, 10-14 years, ..., 80+ years. Equation 1

${}_n a_x = n/2$, the average number of person years lived in the age group (x, x+n) by those dying in the age group. Equation 2

${}_n q_x = \frac{n \cdot {}_n m_x}{1 + (n - {}_n a_x) \cdot {}_n m_x}$, probability of dying between ages x and x+n Equation 3

${}_{\infty} q_{80} = 1.00$, probability of dying for the open-ended age group Equation 4

${}_n p_x = 1 - {}_n q_x$, probability of surviving from age x to age x+n Equation 5

l_x , number of persons at age x Equation 6

$l_{x+n} = l_x \cdot {}_n p_x$, number of persons left alive at age x+n Equation 7

${}_n D_x = l_x - l_{x+n}$, number of deaths between age x and x+n Equation 8

${}_n L_x = n \cdot l_{x+n} + {}_n a_x \cdot {}_n D_x$, person years lived between age x and x+n Equation 9

${}_{\infty} L_x = \frac{l_x}{{}_{\infty} m_x}$, person years lived for the open-ended age group Equation 10

$T_x = \sum_{a=x}^{\infty} {}_n L_a$, person years lived above age x Equation 11

$e_x^o = \frac{T_x}{l_x}$, life expectancy at age x Equation 12

Calculation of HALE using Sullivan's method

Sullivan's method is one of the most widely used methods to compute health expectancy.^{2,3} Although criticized of excluding the possibility of recovering from disability to health,³ it can produce reliable estimation of health expectancy if no sudden or significant health events happen.^{4,5} ${}_n d_x$ is the years lived with disability (YLDs) per person in age group (x, x+n) and represents the proportion of time with disability in age group (x, x+n).

$$HALE_x = \frac{\sum_x (1 - {}_n d_x) {}_n L_x}{l_x} \quad \text{Equation 13}$$

Decomposition of HALE changes

Nusselder & Looman decomposition method was used to decompose the HALE changes between time points t and $t+i$ ($i>0$) into the contribution of disease or injury groups.⁶ This method is based on the Sullivan's method and is also an extension of the decomposition method for life expectancy proposed by Arriaga.⁶⁻⁸ The decomposition is carried out through four steps:

Step 1. To decompose HALE changes into the contribution of mortality effect and disability effect.

$$\Delta_n \text{HALE}_x = \frac{n h_x^{t+i} * n L_x^{t+i} - n h_x^t * n L_x^t}{l_a^t} \quad (x \geq a) \quad \text{Equation 14}$$

$$n h_x^t = 1 - n d_x^t \quad \text{Equation 15}$$

$$n h_x^{t+i} = 1 - n d_x^{t+i} \quad \text{Equation 16}$$

$\Delta_n \text{HALE}_x$ is the changes in HALE_a (a is an exact age, i.e., 0 years old in this study, and researchers can change it into other ages as they need) between time points t and $t+i$, which is caused by the changes in the person years lived without disability in age group $(x, x+n)$. $n h_x^t$ and $n h_x^{t+i}$ are the proportions non-disabled in age group $(x, x+n)$ at time points t and $t+i$, respectively. $n d_x^t$ and $n d_x^{t+i}$ are the proportions disabled, i.e., YLDs per person, in age group $(x, x+n)$ at time points t and $t+i$, respectively. $n L_x^t$ and $n L_x^{t+i}$ are the person years lived in age group $(x, x+n)$ at time points t and $t+i$, respectively. l_a^t is the number of persons at exact age a at time point t .

Then, we obtain mortality effect ($n \text{MOR}_x$), which is the changes in HALE at exact age a caused by the changes in person years lived in age group $(x, x+n)$ between time points t and $t+i$; and disability effect ($n \text{DIS}_x$), which is the changes in HALE at exact age a caused by the changes in proportion disabled in age group $(x, x+n)$ between time points t and $t+i$.

$$\Delta_n \text{HALE}_x = \left(\frac{n h_x^t + n h_x^{t+i}}{2 l_a^t} \right) * \Delta_n L_x + \left(\frac{n L_x^t + n L_x^{t+i}}{2 l_a^t} \right) * \Delta_n h_x \quad \text{Equation 17}$$

$$\Delta_n L_x = n L_x^{t+i} - n L_x^t \quad \text{Equation 18}$$

$$\Delta_n h_x = n h_x^{t+i} - n h_x^t \quad \text{Equation 19}$$

$$n \text{MOR}_x = \left(\frac{n h_x^t + n h_x^{t+i}}{2 l_a^t} \right) * \Delta_n L_x \quad \text{Equation 20}$$

$$n \text{DIS}_x = \left(\frac{n L_x^t + n L_x^{t+i}}{2 l_a^t} \right) * \Delta_n h_x \quad \text{Equation 21}$$

Step 2. To obtain mortality effect by age and cause.

$${}_n\text{MOR}_{xk} = \left(\frac{{}_n h_x^t + {}_n h_x^{t+i}}{2l_a^t} \right) * \Delta {}_n L_{xk} = \left(\frac{{}_n h_x^t + {}_n h_x^{t+i}}{2} \right) * {}_n \text{TOT}_{xk} \quad \text{Equation 22}$$

Where ${}_n\text{MOR}_{xk}$ is the mortality effect brought by cause k in age group $(x, x+n)$. $\Delta {}_n L_{xk}$ is the changes in person years lived in age group $(x, x+n)$ brought by cause k . ${}_n \text{TOT}_{xk}$ is the changes in life expectancy at exact age a , which is brought by changes in person years in age group $(x, x+n)$ due to cause k .

$${}_n \text{TOT}_{xk} = \sum_{y=a,x} {}_n \text{TOT}_{xyk} = \sum_{y=a,x} {}_n \text{TOT}_{xy} * {}_n C_{yk} \quad (a=<y<=x) \quad \text{Equation 23}$$

$${}_n \text{TOT}_{xy} = {}_n \text{DE}_{xy} + {}_n \text{IE}_{xy} + {}_n \text{I}_{xy} = {}_n \text{DE}_{xy} + {}_n \text{OE}_{xy} \quad \text{Equation 24}$$

$${}_n \text{DE}_{xy} = \frac{l_y^t}{l_a^t} * \left(\frac{{}_n L_x^{t+i}}{l_y^{t+i}} - \frac{{}_n L_x^t}{l_y^t} \right) \quad (y=x) \quad \text{Equation 25}$$

$${}_n \text{DE}_{xy} = \frac{l_y^t}{l_a^t} * \left(\frac{T_x^{t+i}}{l_y^{t+i}} - \frac{T_x^t}{l_y^t} \right) \quad (y=x, \text{ open-ended age group}) \quad \text{Equation 26}$$

$${}_n \text{IE}_{xy} = \frac{{}_n L_x^t}{l_a^t} * \left(\frac{l_y^t * l_{y+n}^{t+i}}{l_{y+n}^{t+i} * l_y^{t+i}} - 1 \right) \quad (y<x) \quad \text{Equation 27}$$

$${}_n \text{I}_{xy} = {}_n \text{OE}_{xy} - {}_n \text{IE}_{xy} = \frac{{}_n L_x^{t+i}}{l_a^t} * \left(\frac{l_y^t}{l_y^{t+i}} - \frac{l_{y+n}^t}{l_{y+n}^{t+i}} \right) - \frac{{}_n L_x^t}{l_a^t} * \left(\frac{l_y^t * l_{y+n}^{t+i}}{l_{y+n}^{t+i} * l_y^{t+i}} - 1 \right) \quad (y<x) \quad \text{Equation 28}$$

In above equation, ${}_n \text{TOT}_{xy}$ is the changes in life expectancy at exact age a , which is caused by any changes in all the causes in age groups $(y, y+n)$ ($a=<y<=x$). Theoretically, ${}_n \text{TOT}_{xy}$ includes three parts: (1) direct effect (${}_n \text{DE}_{xy}$) is the effect caused by the mortality changes in age group $(x, x+n)$ ($y=x$); (2) indirect effect (${}_n \text{IE}_{xy}$) is the effect caused by the mortality changes in younger age group $(y, y+n)$ ($y<x$), which produces a change in the number of survivors at the end of the age groups, $y+n$. These increased or decreased survivors later go through age group $(x, x+n)$ according to original mortality in age group $(x, x+n)$ and influences the number of person years; (3) interaction effect (${}_n \text{I}_{xy}$) is the combination of the changed number of survivors at the exact age $y+n$ and the changes in mortality in age group $(x, x+n)$ ($y<x$). Then, We assume that contribution of cause k to changes in life expectancy at exact age a , ${}_n \text{TOT}_{xyk}$, is proportional to its contribution to the mortality changes in age group $(y, y+n)$, i.e., ${}_n C_{yk}$.

$${}_n C_{yk} = \frac{{}_n m_x^{t+i} * {}_n f_{xk}^{t+i} - {}_n m_x^t * {}_n f_{xk}^t}{{}_n m_x^{t+i} - {}_n m_x^t} \quad \text{Equation 29}$$

${}_n m_x^t$ and ${}_n m_x^{t+i}$ are mortality in age group $(x, x+n)$ at time points t and $t+i$, respectively. ${}_n f_{xk}^t$ and ${}_n f_{xk}^{t+i}$ are cause-specific proportions of mortality in age group $(x, x+n)$ at time points t and $t+i$, respectively.

$$\text{MOR}_k = \sum_{x=a,\omega} {}_n \text{MOR}_{xk} \quad \text{Equation 30}$$

Then, the summation of ${}_n\text{MOR}_{xk}$ over different age groups gives the total mortality effect due to cause k (MOR_k). The positive (negative) value of MOR_k indicates that the mortality brought by cause k decreased (increased) between time points t and t+i, which extends (reduces) HALE_a at time point t+i.

In Step 2, to avoid having the results of the decomposition depend on whether 1990 or 2013 is used as a reference, we averaged the components of the difference between two scenarios with 1990 and 2013 as baseline time points, respectively.¹²

Step 3. To obtain disability effect by age and cause.

$${}_n\text{DIS}_{xk} = \left[\frac{{}_nL_x^t + {}_nL_x^{t+i}}{2l_x^t} \right] * \Delta {}_n h_{xk} \quad \text{Equation 31}$$

$$\Delta {}_n h_{xk} = {}_n h_{xk}^{t+i} - {}_n h_{xk}^t \quad \text{Equation 32}$$

$${}_n h_{xk}^t = 1 - {}_n d_{xk}^t = 1 - {}_n d_x^t * {}_n g_{xk}^t \quad \text{Equation 33}$$

$${}_n h_{xk}^{t+i} = 1 - {}_n d_{xk}^{t+i} = 1 - {}_n d_x^{t+i} * {}_n g_{xk}^{t+i} \quad \text{Equation 34}$$

Then,

$$\Delta {}_n h_{xk} = {}_n d_x^t * {}_n g_{xk}^t - {}_n d_x^{t+i} * {}_n g_{xk}^{t+i} \quad \text{Equation 35}$$

where ${}_n h_{xk}^t$ and ${}_n h_{xk}^{t+i}$ are the proportions non-disabled due to cause k in age group (x, x+n) at time points t and t+i, respectively; $\Delta {}_n h_{xk}$ is their difference. ${}_n d_{xk}^t$ and ${}_n d_{xk}^{t+i}$ are the proportions disabled due to cause k in age group (x, x+n) at time points t and t+i. ${}_n g_{xk}^t$ and ${}_n g_{xk}^{t+i}$ are the proportions of all the disabilities due to cause k in age group (x, x+n) at time points t and t+i, i.e., age-cause-specific proportion of YLDs.

$$\text{DIS}_k = \sum_{x=a,\omega} {}_n \text{DIS}_{xk} \quad \text{Equation 36}$$

Then, the summation of ${}_n \text{DIS}_{xk}$ over different age groups gives the total disability effect by cause k (DIS_k). The positive (negative) value of DIS_k indicates that the disability brought by cause k decreases (increases) between time points t and t+i, which extends (reduces) HALE_a at time point t+i.

Step 4. To sum up the mortality effect and disability effect attributable to cause k gives the total effects attributable to cause k (ΔHALE_k), which can be interpreted as the total contribution of cause k to changes in HALE at exact age a. The positive (negative) value of ΔHALE_k indicates that the loss of HALE brought by cause k decreases (increases) between time points t and t+i, which extends (reduces) HALE_a at time point t+i.

$$\Delta \text{HALE}_k = \text{MOR}_k + \text{DIS}_k \quad \text{Equation 37}$$

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Appendix D: Top 10 positive and negative contributors to changes in health adjusted life expectancy at birth in terms of total, mortality, and disability effect

Fig D1 Top 10 positive contributors to changes in health adjusted life expectancy at birth (HALE₀) in terms of total, mortality, and disability effect on at the globe and in 21 regions.

Regions	Top 10 positive contributors to changes in HALE ₀ in terms of total, mortality, and disability effect									
	1	2	3	4	5	6	7	8	9	10
Total effect										
Global	Diarrhea	LRI	IHD	Tuberculosis	NN preterm	Stroke	COPD	Measles	Iron anemia	Tetanus
Central Sub-Saharan Africa	Malaria	LRI	Diarrhea	Tuberculosis	Measles	Onchocecia	Trypano	STD	Cough	Protein malnu
Eastern Sub-Saharan Africa	Diarrhea	LRI	Malaria	Measles	Tuberculosis	WAR	Protein malnu	Meningitis	Iron anemia	NN preterm
Western Sub-Saharan Africa	Diarrhea	Measles	LRI	Malaria	Tuberculosis	Protein malnu	Onchocecia	Meningitis	NN preterm	Cough
South Asia	Diarrhea	LRI	Tuberculosis	NN preterm	Iron anemia	Other NN	Tetanus	COPD	Asthma	Fire sub
Oceania	LRI	Diarrhea	Intestinal inf	Tuberculosis	Measles	Meningitis	Other NN	Malaria	P ulcer	Iron anemia
Southern Sub-Saharan Africa	Diarrhea	IHD	Tuberculosis	WAR	Other NN	Drugs	Measles	LRI	Protein malnu	Stroke
Andean Latin America	WAR	LRI	Diarrhea	Nature	Tuberculosis	Protein malnu	NN preterm	Road injuries	Stroke	Mechanic
Southeast Asia	WAR	LRI	Diarrhea	Tuberculosis	Measles	Iron anemia	NN preterm	Stroke	Other NN	Tetanus
North Africa and Middle East	LRI	Diarrhea	IHD	Stroke	NN preterm	Nature	Road injuries	Congenital	Other cardio	COPD
Central Asia	LRI	Diarrhea	Road injuries	NN enceph	Falls	Stomach C	Lung C	COPD	Drown	Stroke
Caribbean	Diarrhea	LRI	IHD	Tuberculosis	Stroke	Protein malnu	Meningitis	NN preterm	Iron anemia	Road injuries
Tropical Latin America	IHD	Diarrhea	Stroke	LRI	NN preterm	Road injuries	COPD	NN enceph	Protein malnu	Chagas
East Asia	COPD	LRI	Stroke	NN preterm	Diarrhea	Drown	Self-harm	Tuberculosis	Stomach C	RHD
Eastern Europe	Stroke	Road injuries	IHD	NN enceph	Congenital	Stomach C	Other inj	COPD	Lung C	NN preterm
Central Latin America	Diarrhea	LRI	WAR	Road injuries	Protein malnu	NN preterm	Stroke	Violence	IHD	NN enceph
Central Europe	IHD	Stroke	LRI	Road injuries	Falls	NN preterm	Congenital	COPD	NN enceph	Stomach C
Southern Latin America	IHD	Stroke	NN preterm	Lung C	Violence	WAR	Mechanic	Self-harm	Falls	NN enceph
High-income North America	IHD	Road injuries	HIV/AIDS	Stroke	Lung C	LRI	Violence	Breast C	Falls	Colorect C
Western Europe	IHD	Stroke	Road injuries	Falls	Lung C	Self-harm	Stomach C	COPD	Congenital	LRI
Australasia	IHD	Stroke	Road injuries	Lung C	COPD	Falls	Colorect C	Congenital	LRI	Breast C
High-income Asia Pacific	Stroke	IHD	Stomach C	Road injuries	LRI	COPD	Asthma	Falls	HTN HD	Congenital
Mortality effect										
Global	Diarrhea	LRI	IHD	NN preterm	Tuberculosis	Stroke	COPD	Measles	Other NN	Tetanus
Central Sub-Saharan Africa	Malaria	LRI	Diarrhea	Tuberculosis	Measles	Trypano	STD	Cough	Protein malnu	Other NN
Eastern Sub-Saharan Africa	Diarrhea	LRI	Malaria	Measles	Tuberculosis	Protein malnu	War	Meningitis	NN preterm	NN enceph
Western Sub-Saharan Africa	Diarrhea	Measles	LRI	Malaria	Tuberculosis	Protein malnu	Meningitis	NN preterm	Cough	Tetanus
South Asia	Diarrhea	LRI	Tuberculosis	NN preterm	Other NN	COPD	Tetanus	Asthma	Fire sub	NN enceph
Oceania	LRI	Diarrhea	Intestinal inf	Tuberculosis	Measles	Other NN	Meningitis	Malaria	P ulcer	Appendicitis
Southern Sub-Saharan Africa	Diarrhea	IHD	Tuberculosis	Other NN	Drugs	Measles	LRI	Protein malnu	Stroke	Lung C
Andean Latin America	LRI	Diarrhea	Tuberculosis	Protein malnu	NN preterm	Stroke	IHD	Foreign body	NN enceph	STD
Southeast Asia	LRI	Tuberculosis	Diarrhea	NN preterm	Measles	Stroke	Other NN	Tetanus	Malaria	Meningitis
North Africa and Middle East	LRI	Diarrhea	IHD	Stroke	NN preterm	Congenital	Nature	Other cardio	COPD	Road injuries
Central Asia	LRI	Diarrhea	NN enceph	Stomach C	Lung C	Road injuries	COPD	Drown	Stroke	NN preterm
Caribbean	Diarrhea	IHD	LRI	Tuberculosis	Stroke	Protein malnu	NN preterm	Meningitis	NN enceph	Tetanus
Tropical Latin America	IHD	Diarrhea	Stroke	NN preterm	LRI	Road injuries	NN enceph	Protein malnu	COPD	STD
East Asia	COPD	LRI	Stroke	NN preterm	Diarrhea	Drown	Self-harm	Tuberculosis	Congenital	Stomach C
Eastern Europe	Stroke	Congenital	NN enceph	Road injuries	IHD	NN preterm	Stomach C	COPD	Lung C	Other inj

Central Latin America	Diarrhea	LRI	NN preterm	IHD	Stroke	Protein malnu	Violence	NN enceph	Tuberculosis	Road injuries
Central Europe	IHD	Stroke	LRI	NN preterm	Road injuries	Congenital	COPD	Stomach C	NN enceph	Self-harm
Southern Latin America	IHD	Stroke	NN preterm	Lung C	Violence	Self-harm	Congenital	NN enceph	Endocrine	Hernia
High-income North America	IHD	Stroke	HIV/AIDS	Road injuries	LRI	Lung C	Violence	NN preterm	Breast C	Congenital
Western Europe	IHD	Stroke	Road injuries	Congenital	Lung C	Self-harm	COPD	Stomach C	NN preterm	LRI
Australasia	IHD	Stroke	Road injuries	COPD	Lung C	Colorect C	Congenital	LRI	NN preterm	Breast C
High-income Asia Pacific	Stroke	IHD	Stomach C	Road injuries	COPD	LRI	Asthma	Congenital	HTN HD	Tuberculosis
Disability effect										
Global	Iron anemia	War	Falls	Sense	Nematod inf	Road injuries	Oral	Mechanic	P ulcer	Other neuro
Central Sub-Saharan Africa	Onchocercia	Malaria	Iodine	Sense	Other NTD	Road injuries	Filariasis	Other respira	Meningitis	Trypano
Eastern Sub-Saharan Africa	War	Sense	Iron anemia	Onchocercia	Other respira	Schistosoma	Malaria	IHD	Filariasis	Meningitis
Western Sub-Saharan Africa	Onchocercia	Schistosoma	Malaria	Iron anemia	Sense	Meningitis	Filariasis	Diarrhea	Other NTD	IHD
South Asia	Iron anemia	Sense	Gastritis	Filariasis	Hemoglo	Fire sub	Nematod inf	Tuberculosis	Other trs inj	Iodine
Oceania	Iron anemia	Sense	Filariasis	Meningitis	Other neuro	Other respira	Nematod inf	P ulcer	Oral	Protein malnu
Southern Sub-Saharan Africa	War	Falls	Iodine	Iron anemia	Road injuries	Sense	IHD	Schistosoma	Intel dis	Other neuro
Andean Latin America	War	Nature	Sense	Mechanic	Road injuries	Iron anemia	Falls	Other respira	Nematod inf	P ulcer
Southeast Asia	War	Iron anemia	Sense	Nematod inf	Other respira	Filariasis	Road injuries	Asthma	P ulcer	Diarrhea
North Africa and Middle East	War	Sense	Iron anemia	Road injuries	Other neuro	Trachoma	Other respira	Iodine	Falls	Nature
Central Asia	Falls	Sense	Road injuries	Iron anemia	Iodine	Other nutr def	Skin	Back & neck	Mechanic	Meningitis
Caribbean	Sense	Falls	Iron anemia	Road injuries	Mechanic	Nematod inf	Asthma	Filariasis	Other respira	P ulcer
Tropical Latin America	Sense	COPD	Falls	Road injuries	Other respira	Mechanic	Other neuro	Oral	Migraine	Intel dis
East Asia	Nematod inf	Iron anemia	Sense	Oral	Other digest	Diarrhea	Road injuries	P ulcer	Falls	Gastritis
Eastern Europe	Road injuries	Falls	Sense	Mechanic	Other inj	Other trs inj	IHD	Chronic kidney	Asthma	Skin
Central Latin America	War	Sense	Road injuries	Mechanic	Falls	Iron anemia	Other neuro	Violence	Nematod inf	P ulcer
Central Europe	Falls	Road injuries	Sense	Mechanic	Skin	Other trs inj	P ulcer	Alcohol	Oral	NN enceph
Southern Latin America	Falls	War	Road injuries	Mechanic	Sense	Oral	Nematod inf	Chagas	Violence	P ulcer
High-income North America	Falls	Sense	Road injuries	Atrial FF	Oral	IHD	Mechanic	Migraine	COPD	Intel dis
Western Europe	Falls	Road injuries	Sense	Mechanic	Oral	IHD	P ulcer	Other neuro	Iodine	Other respira
Australasia	Falls	Road injuries	Back & neck	Sense	Oral	Mechanic	T headache	P ulcer	Other respira	Other neuro
High-income Asia Pacific	Falls	Road injuries	Other neuro	Mechanic	Sense	P ulcer	Osteoarthritis	Asthma	Migraine	Gastritis

Diarrheal diseases	Diarrhea	Lower respiratory infections	LRI	Ischemic heart disease	IHD	Tuberculosis	Tuberculosis
Preterm birth complications	NN preterm	Cerebrovascular disease	Stroke	Chronic obstructive pulmonary disease	COPD	Measles	Measles
Iron-deficiency anemia	Iron anemia	Tetanus	Tetanus				

Notes: Regions are ordered according to HALE₀ in 1990, from lowest to highest. All the diseases and injuries are at Level 3. Alcohol=Alcohol use disorders. Atrial FF=Atrial fibrillation and flutter. Back & neck=Low back and neck pain. Brain C=Brain and nervous system cancer. Breast C=Breast cancer. Chagas=Chagas disease. Chronic kidney=Chronic kidney disease. Colorect C=Colon and rectum cancer. Congenital=Congenital anomalies. COPD=Chronic obstructive pulmonary disease. Cough=Whooping cough. Diarrhea=Diarrheal diseases. Drugs=Drug use disorders. Drown=Drowning. Endocrine=Endocrine, metabolic, blood, and immune disorders. Filariasis=Lymphatic filariasis. Fire sub=Fire, heat, and hot substances. Gastritis=Gastritis and duodenitis. Hemoglobino=Hemoglobinopathies and hemolytic anemias. Hernia=Inguinal, femoral, and abdominal hernia. HTN HD=Hypertensive heart disease. IHD=Ischemic heart disease. Intel dis=Idiopathic intellectual disability. Iodine=Iodine deficiency. Iron anemia=Iron-deficiency anemia. Intestinal inf=Intestinal infectious diseases. LRI=Lower respiratory infections. Lung C=Tracheal, bronchus and lung cancer. Mechanic=Exposure to mechanical forces. Nature=Exposure to forces of nature. Nematod inf=Intestinal nematode infections. NN enceph=Neonatal encephalopathy due to birth asphyxia and trauma. NN preterm=Preterm birth complications. Onchocecia=Onchocerciasis. Oral=Oral disorders. Other inj=Other unintentional injuries. Other cardio=Other cardiovascular and circulatory diseases. Other digest=Other digestive diseases. Other neuro=Other neurological disorders. Other NN=Other neonatal disorders. Other NTD=Other neglected tropical diseases. Other nutr def=Other nutritional deficiencies. Other respira=Other chronic respiratory diseases.

Other trs inj=Other transport injuries. Protein malnu=EM=Protein-energy malnutrition. P ulcer=Peptic ulcer disease. RHD=Rheumatic heart disease. Schistosoma=Schistosomiasis. Sense=Sense organ diseases. Skin=Skin and subcutaneous diseases. STD=Sexually transmitted diseases excluding HIV. Stomach C=Stomach cancer. Stroke=Cerebrovascular disease. T headache=Tension-type headache. Trypano=African trypanosomiasis. Violence=Interpersonal violence. War=Collective violence and legal intervention.

Fig D2 Top 10 negative contributors to changes in health adjusted life expectancy at birth (HALE₀) in terms of total, mortality, and disability effect on at the globe and in 21 regions.

Regions	Top 10 negative contributors to changes in HALE ₀ in terms of total, mortality and disability effect									
	1	2	3	4	5	6	7	8	9	10
Total effect										
Global	HIV/AIDS	Diabetes	Chr kidney	M headache	Depression	Other MSK	Drugs	ILD	Hemoglo	Alzheimer
Central Sub-Saharan Africa	HIV/AIDS	Self-harm	Cirr Hep C	Diabetes	M headache	IHD	Endocrine	HTN HD	Skin	NN sepsis
Eastern Sub-Saharan Africa	HIV/AIDS	M headache	Back & neck	Other MSK	Diabetes	Depression	Alzheimer	Prostate C	Intel dis	Drugs
Western Sub-Saharan Africa	HIV/AIDS	Diabetes	Road injuries	Stroke	IHD	HTN HD	CMP	Drugs	M headache	Endocrine
South Asia	Self-harm	Diabetes	Chr kidney	IHD	HTN HD	M headache	Depression	Road injuries	Other cardio	Other MSK
Oceania	Diabetes	HIV/AIDS	Chr kidney	Violence	Liver C	Medical	Animal	Breast C	CMP	Congenital
Southern Sub-Saharan Africa	HIV/AIDS	Violence	Diabetes	Self-harm	Alcohol	Mechanic	Road injuries	Endocrine	Other MSK	M headache
Andean Latin America	Other MSK	HIV/AIDS	Diabetes	Cirr Hep C	Chr kidney	Alcohol	Congenital	Liver C	Pancreatic C	Prostate C
Southeast Asia	Diabetes	HIV/AIDS	Alzheimer	COPD	Migraine	Other MSK	Drugs	M headache	Urinary	Liver C
North Africa and Middle East	Diabetes	M headache	Drugs	Liver C	HIV/AIDS	Other MSK	Depression	Self-harm	Medical	Endocrine
Central Asia	Diabetes	Cirr Hep B	HIV/AIDS	Cirr alcohol	M headache	War	Other cardio	Cirr Hep C	Other cirr	Pancreatic C
Caribbean	Diabetes	Nature	Prostate C	Chr kidney	Liver C	Other MSK	Pancreatic C	HTN HD	Medical	M headache
Tropical Latin America	Diabetes	Other MSK	Depression	Prostate C	Alzheimer	Anxiety	Brain C	Endocrine	Colorect C	M headache
East Asia	Diabetes	Back & neck	Chr kidney	ILD	M headache	HIV/AIDS	Lung C	CMP	Other respira	Prostate C
Eastern Europe	CMP	HIV/AIDS	M headache	Cirr Hep C	Other MSK	Cirr alcohol	Diabetes	Tuberculosis	HTN HD	Cirr Hep B
Central Latin America	Chr kidney	Diabetes	Other MSK	HIV/AIDS	Prostate C	Alzheimer	M headache	Colorect C	Atrial FF	Brain C
Central Europe	M headache	Diabetes	Atrial FF	Back & neck	Alzheimer	Kidney C	Prostate C	War	Drugs	Inflam bowel
Southern Latin America	Other MSK	Pancreatic C	Drugs	COPD	Other inj	HIV/AIDS	Diabetes	M headache	HTN HD	Urinary
High-income North America	Diabetes	Drugs	Chr kidney	Alzheimer	Back & neck	M headache	Parkinson	Other MSK	Depression	Cirr Hep C
Western Europe	Alzheimer	Diabetes	M headache	Other MSK	Atrial FF	Urinary	Multiple sclerosis	Prostate C	Other NN	Diarrhea
Australasia	Diabetes	Other cardio	Atrial FF	Inflam bowel	M headache	Other NN	Other MSK	Chr kidney	Drugs	Liver C
High-income Asia Pacific	Diabetes	Back & neck	Self-harm	Other cardio	M headache	Parkinson	Colorect C	Prostate C	Breast C	Other MSK
Mortality effect										
Global	HIV/AIDS	Chr kidney	Drugs	Diabetes	ILD	Hemoglo	Alzheimer	Atrial FF	NN sepsis	Pancreatic C
Central Sub-Saharan Africa	HIV/AIDS	Self-harm	Cirr Hep C	IHD	Diabetes	Endocrine	NN sepsis	Medical	HTN HD	Drugs
Eastern Sub-Saharan Africa	HIV/AIDS	Alzheimer	Drugs	Prostate C	Self-harm	Peri vascular	Atrial FF	Parkinson	Lymphoma	Other neuro
Western Sub-Saharan Africa	HIV/AIDS	IHD	Road injuries	Stroke	Diabetes	HTN HD	CMP	Drugs	Endocrine	Chr kidney
South Asia	IHD	Chr kidney	Self-harm	HTN HD	Road injuries	Alzheimer	Cirr Hep C	Violence	ILD	Ovarian C
Oceania	Diabetes	HIV/AIDS	Chr kidney	Violence	Liver C	Medical	Animal	Endocrine	Congenital	CMP
Southern Sub-Saharan Africa	HIV/AIDS	Road injuries	Violence	Mechanic	Self-harm	Diabetes	Endocrine	Alcohol	Falls	Medical
Andean Latin America	HIV/AIDS	Cirr Hep C	Chr kidney	Liver C	Pancreatic C	ILD	Brain C	Falls	Intestinal obst	Alcohol
Southeast Asia	HIV/AIDS	Diabetes	Alzheimer	Drugs	Liver C	COPD	HTN HD	IHD	Urinary	Other inj
North Africa and Middle East	War	Diabetes	Liver C	HIV/AIDS	Drugs	Self-harm	Endocrine	Medical	Pancreatic C	Brain C
Central Asia	Cirr Hep B	Diabetes	HIV/AIDS	Cirr alcohol	Other cardio	Cirr Hep C	Other Cirr	Pancreatic C	HTN HD	Alzheimer
Caribbean	Chr kidney	Liver C	Pancreatic C	HTN HD	Prostate C	Medical	HIV/AIDS	Brain C	Falls	Other inj
Tropical Latin America	Endocrine	Brain C	Diabetes	Colorect C	Urinary	Alzheimer	Chr kidney	Parkinson	Prostate C	Pancreatic C

East Asia	ILD	Chr kidney	HIV/AIDS	Lung C	CMP	Nature	Other respira	Alzheimer	Pancreatic C	Prostate C
Eastern Europe	CMP	HIV/AIDS	Cirr Hep C	Cirr alcohol	Tuberculosis	HTN HD	Self-harm	Cirr Hep B	Other Cirr	Other cardio
Central Latin America	Chr kidney	HIV/AIDS	Alzheimer	Colorect C	Prostate C	Self-harm	Pancreatic C	Brain C	Liver C	Lymphoma
Central Europe	Alzheimer	Drugs	Kidney C	Atrial FF	Other Cirr	Parkinson	HIV/AIDS	Peri vascular	Prostate C	Pancreatic C
Southern Latin America	Pancreatic C	Drugs	HTN HD	HIV/AIDS	Urinary	Road injuries	Falls	Ovarian C	Other inj	ILD
High-income North America	Drugs	Chr kidney	Alzheimer	Atrial FF	Parkinson	Cirr Hep C	Falls	ILD	Diarrhea	Liver C
Western Europe	Alzheimer	Atrial FF	Diarrhea	Peri vascular	Liver C	Pancreatic C	Drugs	Urinary	Parkinson	ILD
Australasia	Atrial FF	Drugs	Liver C	ILD	Endocrine	Parkinson	Chr kidney	Falls	Mesothelioma	Hepatitis
High-income Asia Pacific	Self-harm	Parkinson	Atrial FF	Prostate C	Colorect C	Urinary	Breast C	Pancreatic C	Kidney C	Medical
Disability effect										
Global	Diabetes	NN preterm	M headache	HIV/AIDS	Other cardio	Depression	Other MSK	COPD	Congenital	Other NN
Central Sub-Saharan Africa	M headache	HIV/AIDS	NN preterm	War	Other cardio	Skin	COPD	Protein malnu	Other MSK	RHD
Eastern Sub-Saharan Africa	HIV/AIDS	M headache	Diabetes	NN preterm	Other MSK	Back & neck	COPD	Depression	Other cardio	Congenital
Western Sub-Saharan Africa	HIV/AIDS	Diabetes	M headache	Other cardio	NN preterm	COPD	Depression	Prostate C	HTN HD	Alcohol
South Asia	Diabetes	Other cardio	NN preterm	M headache	Depression	Other MSK	NN jaundice	NN enceph	Congenital	Skin
Oceania	Other cardio	HIV/AIDS	NN preterm	M headache	Rheu arthritis	Breast C	Alcohol	Diabetes	Nature	Dengue
Southern Sub-Saharan Africa	HIV/AIDS	Other MSK	Alcohol	M headache	Diabetes	Back & neck	Other NTD	Other cardio	NN preterm	Prostate C
Andean Latin America	Other MSK	IHD	Diabetes	COPD	Congenital	NN preterm	M headache	Alcohol	Back & neck	Prostate C
Southeast Asia	Diabetes	Other cardio	NN preterm	Migraine	M headache	Other MSK	Dengue	COPD	Tuberculosis	Congenital
North Africa and Middle East	Diabetes	M headache	NN preterm	Congenital	Urinary	Other MSK	Depression	COPD	Drugs	Other NN
Central Asia	Diabetes	M headache	War	NN preterm	Urinary	Alcohol	Other NN	Congenital	Inflam bowel	Rheu arthritis
Caribbean	Diabetes	Nature	IHD	COPD	Other MSK	Prostate C	NN preterm	M headache	Rheu arthritis	Epilepsy
Tropical Latin America	Diabetes	IHD	Other MSK	Depression	Anxiety	Congenital	NN preterm	M headache	Prostate C	Alzheimer
East Asia	Diabetes	Back & neck	NN preterm	Congenital	M headache	Urinary	COPD	Other cardio	Skin	IHD
Eastern Europe	M headache	Other MSK	Diabetes	Other NN	Back & neck	HIV/AIDS	NN preterm	Congenital	Urinary	Alcohol
Central Latin America	Diabetes	Other MSK	IHD	COPD	NN preterm	M headache	Congenital	Prostate C	Epilepsy	Chr kidney
Central Europe	Diabetes	M headache	Other cardio	Congenital	Back & neck	Atrial FF	NN preterm	War	Chr kidney	Other NN
Southern Latin America	Other MSK	Diabetes	Congenital	Other cardio	M headache	NN preterm	COPD	Back & neck	Other inj	Migraine
High-income North America	Diabetes	Stroke	Back & neck	NN preterm	M headache	Depression	Chr kidney	Other MSK	Rheu arthritis	Prostate C
Western Europe	Diabetes	M headache	Other MSK	Other cardio	NN preterm	Prostate C	Urinary	Multiple sclerosis	Inflam bowel	Other NN
Australasia	Diabetes	Other cardio	Inflam bowel	COPD	M headache	NN preterm	IHD	Alzheimer	Other NN	Other MSK
High-income Asia Pacific	Diabetes	Back & neck	Other cardio	M headache	IHD	Other MSK	NN preterm	COPD	Other NN	T headache

HIV/AIDS	HIV/AIDS	Diabetes mellitus	Diabetes	Chronic kidney disease	Chr kidney	Primary headache with medication overuse	M headache
Depressive disorders	Depression	Other musculoskeletal disorders	Other MSK	Drug use disorders	Drugs	Interstitial lung disease and pulmonary sarcoidosis	ILD
Hemoglobinopathies and hemolytic anemias	Hemoglo	Alzheimer's disease and other dementias	Alzheimer				

Notes: Regions are ordered according to HALE₀ in 1990, from lowest to highest. All the diseases and injuries are at Level 3. Alcohol=Alcohol use disorders. Alzheimer=Alzheimer's disease and other dementias. Animal=Animal contact. Anxiety=Anxiety disorders. Atrial FF=Atrial fibrillation and flutter. Back & neck=Low back and neck pain. Brain C=Brain and nervous system cancer. Breast C=Breast cancer. Cirr alcohol=Cirrhosis due to alcohol use. Cirr Hep B=Cirrhosis due to hepatitis B. Cirr Hep C=Cirrhosis due to hepatitis C. Chr kidney=Chronic kidney disease. CMP=Cardiomyopathy and myocarditis. Colorect C=Colon and rectum cancer. Congenital=Congenital anomalies. COPD=Chronic obstructive pulmonary disease. Depression=Depressive disorders. Diabetes=Diabetes mellitus. Diarrhea=Diarrhoeal diseases. Drugs=Drug use disorders. Endocrine=Endocrine, metabolic, blood, and immune disorders. Hemoglo=Hemoglobinopathies and hemolytic anemias. HTN HD=Hypertensive heart disease. IHD=Ischemic heart disease. ILD=Interstitial lung disease

and pulmonary sarcoidosis. Inflamm bowel=Inflammatory bowel disease. Intestinal obst=Paralytic ileus and intestinal obstruction. Intel dis=Idiopathic intellectual disability. Kidney C=Kidney cancer. Liver C=Liver cancer. Lung C=Tracheal, bronchus and lung cancer. Lymphoma=Non-Hodgkin lymphoma. M headache= Primary headache with medication overuse. Mechanic=Exposure to mechanical forces. Medical=Adverse effects of medical treatment. Nature=Exposure to forces of nature. NN enceph=Neonatal encephalopathy due to birth asphyxia and trauma. NN jaundice=Hemolytic disease and other neonatal jaundice. NN preterm=Preterm birth complications. NN sepsis=Neonatal sepsis and other neonatal infections. Other cardio=Other cardiovascular and circulatory diseases. Other Cirr=Cirrhosis due to other causes. Other inj=Other unintentional injuries. Other MSK=Other musculoskeletal disorders. Other NN=Other neonatal disorders. Other neuro=Other neurological disorders. Other NTD=Other neglected tropical diseases. Other respira=Other chronic respiratory diseases. Ovarian C=Ovarian cancer. Pancreatic C=Pancreatic cancer. Parkinson=Parkinson disease. Protein malnu=Protein-energy malnutrition. Peri vascular=Peripheral vascular disease. Prostate C=Prostate cancer. RHD=Rheumatic heart disease. Rheu arthritis=Rheumatoid arthritis. Skin=Skin and subcutaneous diseases. Stroke=Cerebrovascular disease. T headache=Tension-type headache. Urinary=Urinary diseases and male infertility. Violence=Interpersonal violence. War=Collective violence and legal intervention.