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Supplementary appendix

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APPENDIX

Common values in assessing health outcomes from disease and injury: disability weights measurement study for the Global Burden of Disease Study 2010

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Section 1. Survey instruments

We developed a suite of standardized survey instruments to elicit comparative assessments on the health consequences associated with a wide array of health outcomes, including the 220 unique health states that collectively defined the universe of non-fatal outcomes in the Global Burden of Diseases, Injuries, and Risk Factors Study 2010 (GBD 2010). The basis for all comparisons was a set of brief lay descriptions that highlighted the major functional consequences and symptoms associated with each health state using simple, nonclinical vocabulary. The two main types of questions used in this study are described in the following sections.

A. Paired comparison questions

Assessments of nonfatal health outcomes were elicited using a paired comparison question, in which respondents were presented with two descriptions of hypothetical people, each living in a particular health state, and then asked which person they regarded as being healthier. The specific introduction and framing of the paired comparison in the household surveys were as follows:

Now, we want to learn how people compare different health problems.

A person's health may limit how well parts of his body or his mind works. As a result, some people are not able to do all of the things in life that others may do, and some people are more severely limited than others.

I am going to ask you a series of questions about different health problems. In each question I will describe two different people to you. You should imagine that these two people have the same number of years left to live, and that they will experience the health problems that I describe for the rest of their lives. I will ask you to tell me which person you think is healthier overall, in terms of having fewer physical or mental limitations on what they can do in life.

Some of the questions may be easy to answer, while others may be harder. There are no right or wrong answers to these questions. Instead, we are interested in finding out your personal views.

The first person [*Lay description for randomly selected health state inserted here, for example "...has mild tremors and moves a little slowly, but is able to walk and do daily activities without assistance."*]

The second person [*Lay description for randomly selected health state inserted here, for example "...has some trouble remembering recent events, and finds it hard to concentrate and make decisions and plans."*]

Who do you think is healthier overall, the first person or the second person?

This framing focused on chronic outcomes that persist over a lifetime. In one of four versions of the web-based survey, a variant of the paired comparison question was included in which the conditions were both assumed to be temporary (lasting for one week). For the temporary framing, the following introduction and format was used:

Now, we want to learn how people compare different health problems.

A person's health may limit how well parts of his body or his mind works. As a result, some people are not able to do all of the things in life that others may do, and some people are more severely limited than others.

Following is a series of questions about different health problems. In each question two different people will be described to you. You should imagine that each person experiences the health problem described for **one week**, and then returns to normal health. Identify which person you think is healthier overall, in terms of having fewer physical or mental limitations on what they can do in life.

Some of the questions may be easy to answer, while others may be harder. There are no right or wrong answers to these questions. Instead, we are interested in finding out your personal views.

Consider the following two people, imagining that they experience these health problems for one week and then return to normal health:

The first person [*Lay description for randomly selected health state inserted here, for example "...has a fever and aches, and feels weak, which causes some difficulty with daily activities."*]

The second person [*Lay description for randomly selected health state inserted here, for example “...has pain in the leg, which causes some difficulty running, walking long distances, and getting up and down.”*]

Who do you think has a better health experience overall, the first person or the second person?

B. Population health equivalence questions

The web survey included another type of question on ‘population health equivalence’ in order to elicit tradeoffs between mortality and nonfatal outcomes. Questions were framed as follows:

Thank you for those answers. The last questions will ask you to compare the overall health benefits produced by two different programs. Imagine there were two different health programs.

The first program prevented 1000 people from getting an illness that causes rapid death.

The second program prevented [*Number selected randomly from {1500, 2000, 3000, 5000, 10 000}*] people from getting an illness that is not fatal but causes the following lifelong health problems: [*Lay description for randomly selected health state inserted here, for example, “Some difficulty in moving around, and in using the hands for lifting and holding things, dressing and grooming.”*].

Which program would you say produced the greater overall population health benefit?

This ‘equivalence’ method derives from a technique that was developed during the 1970s and served as the antecedent of the person trade-off (PTO) popularized by Nord¹ and applied in the 1996 GBD disability weights study.² Fanshel and Bush³ first proposed ‘weighting by equivalence in population’ as one possible approach to develop an index of health outcomes, and the method was subsequently applied in an empirical study by Patrick et al.⁴ In the 1996 GBD study, two variants of the PTO were used, drawing from Nord’s work and from these earlier precedents. The first PTO variant adopted the same equivalence framing originally developed by Patrick and colleagues, which weighs life extension for groups of people in ideal health against life extension for people in less-than-ideal health. This question has been criticized based on fairness arguments.⁵ The second variant of the PTO in the 1996 GBD study weighs life extension for healthy people against health improvements for people with a reference condition, which provides the point of departure for the framing of population health equivalence questions in the present study. In the 1996 study this question was framed as a prospective policy choice with a heavy emphasis on resource allocation. In keeping with the focus in the GBD 2010 on the construct of health loss, we explicitly avoided framing of the question in terms of resource allocation decisions, as this framing may evoke distributional concerns that are orthogonal to the health construct. We also focused on the retrospective evaluation of health benefits conferred by different preventive programs, in order to avoid placing respondents in the difficult position of having to make even a hypothetical choice that foreshadows life-and-death consequences for other people.

C. Survey instrument versions

Five survey instruments were developed including the household survey and four variants of the web survey. Differences between instruments pertained to the types of questions used and the sets of health states that were evaluated by respondents.

Across all versions of the survey, there were a total of 281 different health states. The GBD 2010 study includes a subset of 220 of these that are mapped to the 1160 sequelae resulting from 289 disease and injury causes in the study. The 61 additional states that were included in at least one version of the survey but are not included in the final GBD 2010 list fall into several categories:

- States that were included for other research purposes, including experimentation on the labeling of health outcomes in paired comparison studies

- States that were connected to causes and sequelae that were provisionally included in the GBD but subsequently excluded based on revision of disease models, for example due to lack of epidemiologic data for estimation of prevalence
- States that were made obsolete by revision of lay descriptions to improve consistency across the full set of states

The household surveys, including the four face-to-face surveys and the United States telephone survey, included 108 health states. Of these, 89 were states included in the final GBD 2010 list. The subset of 108 states in the household survey was selected based on two criteria: (1) that the most salient aspects could be easily communicated to lay respondents through relatively short descriptions (i.e. in 35 or fewer words); and (2) that they could be presented realistically as chronic outcomes that would persist over a lifetime. The second criterion aimed to avoid conflating severity with duration, so health states that typically manifest as acute or episodic outcomes were reserved for the web-based survey, in order that a separate temporary framing might be used for these outcomes. Household survey respondents were randomly assigned to complete 15 paired comparisons.

Respondents to the web-based survey were assigned at random to one of four different survey versions. Version 1 was identical to the household survey, with the same set of 108 states. Version 2 used the same framing of the paired comparison question as in the household survey but included a different subset of health states, partially overlapping with the set of states in Version 1. Version 3 used the temporary (one-week) framing of the paired comparison and included a subset of states that were plausible to imagine as lasting for one week, again partially overlapping the other sets of states. Respondents to Version 1 to 3 on the web survey, as in the household survey, were assigned to complete 15 randomly selected paired comparisons. For Version 4 of the web survey, respondents were assigned to complete five paired comparisons, using the lifetime framing and selected from a different subset, and three population health equivalence questions.

Appendix Table 1 indicates, for the 220 health states in the GBD 2010, which of these states were included in paired comparison questions for each of the survey variants.

Appendix Table 1 – Health-states included in paired comparisons for each survey variant				
Health state	HH/Web V1	Web V2	Web V3	Web V4
<i>Infectious disease</i>				
Infectious disease: acute episode, mild			◆	
Infectious disease: acute episode, moderate			◆	
Infectious disease: acute episode, severe			◆	
Infectious disease: post-acute consequences (fatigue, emotional lability, insomnia)		◆	◆	◆
Diarrhoea: mild			◆	
Diarrhoea: moderate			◆	
Diarrhoea: severe			◆	
Epididymo-orchitis		◆	◆	◆
Herpes zoster			◆	
HIV cases: symptomatic, pre-AIDS		◆	◆	◆
HIV/AIDS cases: receiving antiretroviral treatment		◆	◆	◆
AIDS cases: not receiving antiretroviral treatment		◆	◆	◆
Intestinal nematode infections: symptomatic			◆	
Lymphatic filariasis: symptomatic		◆	◆	◆
Ear pain	◆		◆	◆
Tuberculosis: without HIV infection	◆		◆	◆
Tuberculosis: with HIV infection		◆	◆	◆
<i>Cancer</i>				
Cancer: diagnosis and primary therapy		◆	◆	◆
Cancer: metastatic		◆	◆	◆

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Appendix Table 1 (continued from previous page)				
Health state	HH/Web V1	Web V2	Web V3	Web V4
Mastectomy		♦		♦
Stoma		♦		♦
Terminal phase: with medication (for cancers, end-stage kidney/liver disease)	♦		♦	♦
Terminal phase, without medication (for cancers, end-stage kidney or liver disease)		♦	♦	
<i>Cardiovascular and circulatory disease</i>				
Acute myocardial infarction: days 1-2		♦	♦	♦
Acute myocardial infarction: days 3-28		♦	♦	♦
Angina pectoris: mild	♦	♦	♦	
Angina pectoris: moderate		♦	♦	♦
Angina pectoris: severe		♦	♦	♦
Cardiac conduction disorders and cardiac dysrhythmias		♦	♦	♦
Claudication		♦	♦	♦
Heart failure: mild		♦	♦	
Heart failure: moderate		♦	♦	
Heart failure: severe	♦	♦	♦	
Stroke: long-term consequences, mild		♦	♦	♦
Stroke: long-term consequences, moderate		♦	♦	♦
Stroke: long-term consequences, moderate plus cognition problems		♦	♦	♦
Stroke: long-term consequences, severe		♦	♦	♦
Stroke: long-term consequences, severe plus cognition problems		♦	♦	♦
<i>Diabetes, digestive and genitourinary disease</i>				
Diabetic foot			♦	
Diabetic neuropathy		♦	♦	♦
Chronic kidney disease (stage IV)		♦	♦	♦
End-stage renal disease: with kidney transplant		♦	♦	♦
End-stage renal disease: on dialysis		♦	♦	♦
Decompensated cirrhosis of the liver			♦	♦
Gastric bleeding			♦	
Crohn's disease or ulcerative colitis	♦	♦		♦
Benign prostatic hypertrophy: symptomatic cases		♦	♦	♦
Urinary incontinence		♦	♦	
Impotence		♦	♦	♦
Infertility: primary	♦	♦		♦
Infertility: secondary	♦	♦		♦
<i>Chronic respiratory diseases</i>				
Asthma: controlled		♦		♦
Asthma: partially controlled		♦		♦
Asthma: uncontrolled		♦		♦
COPD and other chronic respiratory problems: mild		♦	♦	♦
COPD and other chronic respiratory problems: moderate		♦	♦	♦
COPD and other chronic respiratory problems: severe		♦	♦	♦
<i>Neurological conditions</i>				
Dementia: mild	♦	♦		♦
Dementia: moderate	♦	♦		♦
Dementia: severe	♦	♦		♦
Headache: migraine		♦	♦	♦
Headache: tension-type		♦	♦	♦
Multiple sclerosis: mild	♦	♦		♦
Multiple sclerosis: moderate	♦	♦		♦
Multiple sclerosis: severe	♦	♦		♦
Epilepsy: treated, seizure free		♦	♦	♦
Epilepsy: treated, with recent seizures		♦		♦

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Appendix Table 1 (continued from previous page)

Health state	HH/Web V1	Web V2	Web V3	Web V4
Epilepsy: untreated		♦		♦
Epilepsy: severe		♦		♦
Parkinson's disease: mild	♦	♦		♦
Parkinson's disease: moderate	♦	♦		♦
Parkinson's disease: severe	♦	♦		♦
<i>Mental, behavioral and substance use disorders</i>				
Alcohol use disorder: mild	♦	♦		
Alcohol use disorder: moderate	♦	♦		
Alcohol use disorder: severe	♦	♦		
Fetal alcohol syndrome: mild		♦		♦
Fetal alcohol syndrome: moderate		♦		♦
Fetal alcohol syndrome: severe		♦		♦
Cannabis dependence	♦			
Amphetamine dependence				♦
Cocaine dependence				♦
Heroin and other opioid dependence	♦			
Anxiety disorders: mild	♦	♦	♦	
Anxiety disorders: moderate	♦	♦	♦	
Anxiety disorders: severe	♦	♦	♦	
Major depressive disorder: mild episode	♦	♦	♦	♦
Major depressive disorder: moderate episode	♦	♦	♦	♦
Major depressive disorder: severe episode	♦	♦	♦	♦
Bipolar disorder: manic episode	♦		♦	♦
Bipolar disorder: residual state		♦	♦	♦
Schizophrenia: acute state	♦		♦	♦
Schizophrenia, residual state		♦		♦
Anorexia nervosa	♦	♦		♦
Bulimia nervosa	♦	♦		♦
Attention deficit hyperactivity disorder	♦	♦		♦
Conduct disorder		♦		♦
Asperger's syndrome	♦	♦		♦
Autism	♦	♦		♦
Intellectual disability: mild	♦	♦		♦
Intellectual disability: moderate	♦	♦		♦
Intellectual disability: severe	♦	♦		♦
Intellectual disability: profound	♦	♦		♦
<i>Hearing and vision loss</i>				
Hearing loss: mild	♦	♦		♦
Hearing loss: moderate	♦	♦		♦
Hearing loss: severe		♦		♦
Hearing loss: profound	♦	♦		
Hearing loss: complete	♦	♦		♦
Hearing loss: mild, with ringing		♦	♦	♦
Hearing loss: moderate, with ringing		♦	♦	♦
Hearing loss: severe, with ringing		♦	♦	♦
Hearing loss: profound, with ringing		♦	♦	♦
Hearing loss: complete, with ringing		♦	♦	♦
Distance vision: mild impairment	♦		♦	♦
Distance vision: moderate impairment	♦		♦	♦
Distance vision: severe impairment	♦		♦	♦
Distance vision blindness	♦			
Near vision impairment		♦	♦	♦
<i>Musculoskeletal disorders</i>				
Low back pain: acute, without leg pain	♦	♦	♦	♦

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Appendix Table 1 (continued from previous page)				
Health state	HH/Web V1	Web V2	Web V3	Web V4
Low back pain: acute, with leg pain	◆	◆	◆	
Low back pain: chronic, without leg pain	◆	◆	◆	◆
Low back pain: chronic, with leg pain	◆	◆	◆	
Neck pain: acute, mild		◆		◆
Neck pain: acute, severe	◆		◆	
Neck pain: chronic, mild		◆		◆
Neck pain: chronic, severe	◆		◆	
Musculoskeletal problems: legs, mild		◆	◆	◆
Musculoskeletal problems: legs, moderate	◆	◆	◆	
Musculoskeletal problems: legs, severe	◆	◆	◆	
Musculoskeletal problems: arms, mild		◆	◆	◆
Musculoskeletal problems: arms, moderate	◆	◆	◆	
Musculoskeletal problems: generalised, moderate		◆	◆	
Musculoskeletal problems: generalised, severe		◆	◆	
Gout: acute	◆	◆	◆	
<i>Injuries</i>				
Amputation of finger(s), excluding thumb: long term, with treatment	◆	◆		◆
Amputation of thumb: long term	◆	◆		◆
Amputation of one arm: long term, with or without treatment	◆	◆		◆
Amputation of both arms: long term, with treatment	◆	◆		◆
Amputation of both arms: long term, without treatment	◆	◆		◆
Amputation of toe		◆		◆
Amputation of one leg: long term, with treatment	◆	◆		◆
Amputation of one leg: long term, without treatment	◆	◆		◆
Amputation of both legs: long term, with treatment	◆	◆		◆
Amputation of both legs: long term, without treatment	◆	◆		◆
Burns of <20% total surface area without lower airway burns: short term, with or without treatment			◆	
Burns of <20% total surface area or <10% total surface area if head or neck, or hands or wrist involved: long term, with or without treatment	◆	◆		◆
Burns of ≥20% total surface area: short term, with or without treatment			◆	
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, with treatment	◆	◆		◆
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, without treatment	◆	◆		◆
Lower airway burns: with or without treatment			◆	
Crush injury: short or long term, with or without treatment		◆		◆
Dislocation of hip: long term, with or without treatment		◆	◆	◆
Dislocation of knee: long term, with or without treatment	◆		◆	
Dislocation of shoulder: long term, with or without treatment	◆		◆	
Other injuries of muscle and tendon (includes sprains, strains and dislocations other than shoulder, knee, or hip)			◆	
Drowning and non-fatal submersion: short or long term, with or without treatment		◆	◆	
Fracture of clavicle, scapula, or humerus: short or long term, with or without treatment			◆	
Fracture of face bone: short or long term, with or without treatment			◆	
Fracture of foot bones: short term, with or without treatment			◆	
Fracture of foot bones: long term, without treatment		◆	◆	◆
Fracture of hand: short term, with or without treatment			◆	

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Appendix Table 1 (continued from previous page)				
Health state	HH/Web V1	Web V2	Web V3	Web V4
Fracture of hand: long term, without treatment		♦	♦	♦
Fracture of neck of femur: short term, with or without treatment			♦	
Fracture of neck of femur: long term, with treatment	♦	♦		♦
Fracture of neck of femur: long term, without treatment	♦	♦		♦
Fracture, other than neck of femur: short term, with or without treatment			♦	
Fracture, other than neck of femur: long term, without treatment	♦	♦		♦
Fracture of patella, tibia or fibula, or ankle: short term, with or without treatment			♦	
Fracture of patella, tibia or fibula, or ankle: long term, with or without treatment	♦	♦		♦
Fracture of pelvis: short term			♦	
Fracture of pelvis: long term	♦	♦		♦
Fracture of radius or ulna: short term, with or without treatment			♦	
Fracture of radius or ulna: long term, without treatment	♦	♦		♦
Fracture of skull: short or long term, with or without treatment			♦	
Fracture of sternum or fracture of one or two ribs: short term, with or without treatment			♦	
Fracture of vertebral column: short or long term, with or without treatment			♦	
Fractures: treated, long term		♦		♦
Injured nerves: short term			♦	
Injured nerves: long term	♦	♦		♦
Injury to eyes: short term			♦	
Severe traumatic brain injury: short term, with or without treatment		♦	♦	♦
Traumatic brain injury: long-term consequences, minor, with or without treatment	♦		♦	♦
Traumatic brain injury: long-term consequences, moderate, with or without treatment	♦		♦	♦
Traumatic brain injury: long-term consequences, severe, with or without treatment	♦		♦	♦
Open wound: short term, with or without treatment			♦	
Poisoning: short term, with or without treatment		♦	♦	♦
Severe chest injury: long term, with or without treatment	♦	♦		♦
Severe chest injury: short term, with or without treatment			♦	
Spinal cord lesion below neck: treated		♦		♦
Spinal cord lesion below neck: untreated		♦		♦
Spinal cord lesion at neck: treated		♦		♦
Spinal cord lesion at neck: untreated		♦		♦
<i>Other</i>				
Abdominopelvic problem: mild		♦	♦	♦
Abdominopelvic problem: moderate		♦	♦	♦
Abdominopelvic problem: severe		♦	♦	♦
Anaemia: mild	♦	♦	♦	♦
Anaemia: moderate	♦	♦	♦	♦
Anaemia: severe	♦	♦	♦	♦
Periodontitis			♦	♦
Dental caries: symptomatic			♦	
Severe tooth loss	♦	♦		♦
Disfigurement: level 1	♦	♦		♦
Disfigurement: level 2	♦	♦		♦
Disfigurement: level 3	♦	♦		♦
Disfigurement: level 1 with itch or pain		♦	♦	♦
Disfigurement: level 2, with itch or pain		♦	♦	♦
Disfigurement: level 3, with itch or pain		♦	♦	♦

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Appendix Table 1 (continued from previous page)				
Health state	HH/Web V1	Web V2	Web V3	Web V4
Generic uncomplicated disease: worry and daily medication		◆		◆
Generic uncomplicated disease: anxiety about diagnosis		◆		◆
Iodine-deficiency goiter		◆	◆	
Kwashiorkor			◆	
Severe wasting		◆		◆
Speech problems		◆	◆	◆
Motor impairment: mild		◆	◆	◆
Motor impairment: moderate		◆	◆	◆
Motor impairment: severe		◆	◆	◆
Motor plus cognitive impairments: mild		◆		◆
Motor plus cognitive impairments: moderate		◆		◆
Motor plus cognitive impairments: severe		◆		◆
Rectovaginal fistula		◆	◆	◆
Vesicovaginal fistula		◆	◆	◆

D. Lay descriptions for GBD 2010 health states

Appendix Table 2 lists the lay descriptions associated with each of the 220 health states included in the GBD 2010. The health-state names are simply shorthand definitions of the 220 unique outcomes used for internal accounting purposes, and were not presented to survey respondents.

Appendix Table 2 – Lay descriptions for 220 unique health states in GBD 2010	
Health state	Lay description
<i>Infectious disease</i>	
Infectious disease: acute episode, mild	has a low fever and mild discomfort , but no difficulty with daily activities.
Infectious disease: acute episode, moderate	has a fever and aches, and feels weak, which causes some difficulty with daily activities.
Infectious disease: acute episode, severe	has a high fever and pain, and feels very weak, which causes great difficulty with daily activities.
Infectious disease: post-acute consequences (fatigue, emotional lability, insomnia)	is always tired and easily upset. The person feels pain all over the body and is depressed.
Diarrhoea: mild	has diarrhea three or more times a day with occasional discomfort in the belly.
Diarrhoea: moderate	has diarrhea three or more times a day, with painful cramps in the belly and feeling thirsty
Diarrhoea: severe	has diarrhea three or more times a day with severe belly cramps. The person is very thirsty and feels nauseous and tired.
Epididymo-orchitis	has swelling and tenderness in the testicles and pain during urination.
Herpes zoster	has a blistering skin rash that causes pain, with some burning and itching.
HIV cases: symptomatic, pre-AIDS	has weight loss, fatigue, and frequent infections.
HIV/AIDS cases: receiving antiretroviral treatment	has occasional fevers and infections. The person takes daily medication that sometimes causes diarrhea.
AIDS cases: not receiving antiretroviral treatment	has severe weight loss, weakness, fatigue, cough and fever, and frequent infections, skin rashes and diarrhea.
Intestinal nematode infections: symptomatic	has cramping pain and a bloated feeling in the belly.
Lymphatic filariasis: symptomatic	has swollen legs with hard and thick skin, which causes difficulty in moving around.
Ear pain	has an ear-ache that causes some difficulty with daily activities.
Tuberculosis: without HIV infection	has a persistent cough and fever, is short of breath, feels weak, and has lost a lot of weight.
Tuberculosis: with HIV infection	has a persistent cough and fever, shortness of breath, night sweats, weakness and fatigue and severe weight loss.
<i>Cancer</i>	
Cancer: diagnosis and primary therapy	has pain, nausea, fatigue, weight loss and high anxiety.
Cancer: metastatic	has severe pain, extreme fatigue, weight loss and high anxiety.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Mastectomy	had one of her breasts removed and sometimes has pain or swelling in the arms.
Stoma	has a pouch attached to an opening in the belly to collect and empty stools.
Terminal phase: with medication (for cancers, end-stage kidney/liver disease)	has lost a lot of weight and regularly uses strong medication to avoid constant pain. The person has no appetite, feels nauseous, and needs to spend most of the day in bed.
Terminal phase, without medication (for cancers, end-stage kidney or liver disease)	has lost a lot of weight and has constant pain. The person has no appetite, feels nauseous, and needs to spend most of the day in bed.
<i>Cardiovascular and circulatory disease</i>	
Acute myocardial infarction: days 1-2	has severe chest pain that becomes worse with any physical activity. The person feels nauseous, short of breath, and very anxious.
Acute myocardial infarction: days 3-28	gets short of breath after heavy physical activity, and tires easily, but has no problems when at rest. The person has to take medication every day and has some anxiety.
Angina pectoris: mild	has chest pain that occurs with strenuous physical activity, such as running or lifting heavy objects. After a brief rest, the pain goes away.
Angina pectoris: moderate	has chest pain that occurs with moderate physical activity, such as walking uphill or more than half a kilometer (around a quarter-mile) on level ground. After a brief rest, the pain goes away.
Angina pectoris: severe	has chest pain that occurs with minimal physical activity, such as walking only a short distance. After a brief rest, the pain goes away. The person avoids most physical activities because of the pain.
Cardiac conduction disorders and cardiac dysrhythmias	has periods of rapid and irregular heartbeats and occasional fainting.
Claudication	has cramping pains in the legs after walking a medium distance. The pain goes away after a short rest.
Heart failure: mild	is short of breath and easily tires with moderate physical activity, such as walking uphill or more than a quarter-mile on level ground. The person feels comfortable at rest or during activities requiring less effort.
Heart failure: moderate	is short of breath and easily tires with minimal physical activity, such as walking only a short distance. The person feels comfortable at rest but avoids moderate activity.
Heart failure: severe	is short of breath and feels tired when at rest. The person avoids any physical activity, for fear of worsening the breathing problems.
Stroke: long-term consequences, mild	has some difficulty in moving around and some weakness in one hand, but is able to walk without help.
Stroke: long-term consequences, moderate	has some difficulty in moving around, and in using the hands for lifting and holding things, dressing and grooming.
Stroke: long-term consequences, moderate plus cognition problems	has some difficulty in moving around, in using the hands for lifting and holding things, dressing and grooming, and in speaking. The person is often forgetful and confused.
Stroke: long-term consequences, severe	is confined to bed or a wheelchair, has difficulty speaking and depends on others for feeding, toileting and dressing.
Stroke: long-term consequences, severe plus cognition problems	is confined to bed or a wheelchair, depends on others for feeding, toileting and dressing, and has difficulty speaking, thinking clearly and remembering things.
<i>Diabetes, digestive and genitourinary disease</i>	
Diabetic foot	has a sore on the foot that is swollen and causes some difficulty in walking.
Diabetic neuropathy	has pain, tingling and numbness in the arms, legs, hands and feet. The person sometimes gets cramps and muscle weakness.
Chronic kidney disease (stage IV)	tires easily, has nausea, reduced appetite and difficulty sleeping.
End-stage renal disease: with kidney transplant	sometimes feels tired and down, and has some difficulty with daily activities.
End-stage renal disease: on dialysis	is tired and has itching, cramps, headache, joint pains and shortness of breath. The person needs intensive medical care every other day lasting about half a day.
Decompensated cirrhosis of the liver	has a swollen belly and swollen legs. The person feels weakness, fatigue and loss of appetite.
Gastric bleeding	vomits blood and feels nauseous.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Crohn's disease or ulcerative colitis	has cramping abdominal pain, has diarrhea several times a day, and feels very tired for two months every year. When the person does not have symptoms, there is anxiety about them returning.
Benign prostatic hypertrophy: symptomatic cases	feels the urge to urinate frequently, but when passing urine it comes out slowly and sometimes is painful.
Urinary incontinence	cannot control urinating.
Impotence	has difficulty in obtaining or maintaining an erection.
Infertility: primary	wants to have a child and has a fertile partner, but the couple cannot conceive.
Infertility: secondary	has at least one child, and wants to have more children. The person has a fertile partner, but the couple cannot conceive.
<i>Chronic respiratory diseases</i>	
Asthma: controlled	has wheezing and cough once a month, which does not cause difficulty with daily activities.
Asthma: partially controlled	has wheezing and cough once a week, which causes some difficulty with daily activities.
Asthma: uncontrolled	has wheezing, cough and shortness of breath more than twice a week, which causes difficulty with daily activities and sometimes wakes the person at night.
COPD and other chronic respiratory problems: mild	has cough and shortness of breath after heavy physical activity, but is able to walk long distances and climb stairs.
COPD and other chronic respiratory problems: moderate	has cough, wheezing and shortness of breath, even after light physical activity. The person feels tired and can walk only short distances or climb only a few stairs.
COPD and other chronic respiratory problems: severe	has cough, wheezing and shortness of breath all the time. The person has great difficulty walking even short distances or climbing any stairs, feels tired when at rest, and is anxious.
<i>Neurological conditions</i>	
Dementia: mild	has some trouble remembering recent events, and finds it hard to concentrate and make decisions and plans.
Dementia: moderate	has memory problems and confusion, feels disoriented, at times hears voices that are not real, and needs help with some daily activities.
Dementia: severe	has complete memory loss; no longer recognizes close family members; and requires help with all daily activities.
Headache: migraine	has severe, throbbing head pain and nausea that cause great difficulty in daily activities and sometimes confine the person to bed. Moving around, light, and noise make it worse.
Headache: tension-type	has a moderate headache that also affects the neck, which causes difficulty in daily activities.
Multiple sclerosis: mild	has mild loss of feeling in one hand, is a little unsteady while walking, has slight loss of vision in one eye, and often needs to urinate urgently.
Multiple sclerosis: moderate	needs help walking, has difficulty with writing and arm coordination, has loss of vision in one eye and cannot control urinating.
Multiple sclerosis: severe	has slurred speech and difficulty swallowing. The person has weak arms and hands, very limited and stiff leg movement, has loss of vision in both eyes and cannot control urinating.
Epilepsy: treated, seizure free	had sudden seizures in the past, but they have stopped now with medicines. The person has some drowsiness, difficulty concentrating and some anxiety about future episodes.
Epilepsy: treated, with recent seizures	has sudden seizures once a month, with violent muscle contractions and stiffness and loss of consciousness. Between seizures the person has some drowsiness, difficulty concentrating and anxiety about future episodes.
Epilepsy: untreated	has sudden seizures twice a month, with violent muscle contractions and stiffness, loss of consciousness, and loss of urine or stool control. Between seizures the person has anxiety about future episodes.
Epilepsy: severe	has sudden, prolonged seizures once a week, with violent muscle contractions and stiffness, loss of consciousness, and loss of urine or stool control. Between seizures the person has drowsiness, memory loss, difficulty concentrating and anxiety.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Parkinson's disease: mild	has mild tremors and moves a little slowly, but is able to walk and do daily activities without assistance.
Parkinson's disease: moderate	has moderate tremors and moves slowly, which causes some difficulty in walking and daily activities. The person has some trouble swallowing, talking, sleeping, and remembering things.
Parkinson's disease: severe	has severe tremors and moves very slowly, which causes great difficulty in walking and daily activities. The person falls easily and has a lot of difficulty talking, swallowing, sleeping, and remembering things.
<i>Mental, behavioral and substance use disorders</i>	
Alcohol use disorder: mild	drinks a lot of alcohol and sometimes has difficulty controlling the urge to drink. While intoxicated, the person has difficulty performing daily activities.
Alcohol use disorder: moderate	drinks a lot, gets drunk almost every week and has great difficulty controlling the urge to drink. Drinking and recovering cause great difficulty in daily activities, sleep loss, and fatigue.
Alcohol use disorder: severe	gets drunk almost every day and is unable to control the urge to drink. Drinking and recovering replace most daily activities. The person has difficulty thinking, remembering and communicating, and feels constant pain and fatigue.
Fetal alcohol syndrome: mild	is a little slow in developing physically and mentally, which causes some difficulty in learning but no other difficulties in daily activities.
Fetal alcohol syndrome: moderate	is slow in developing physically and mentally, which causes some difficulty in daily activities.
Fetal alcohol syndrome: severe	is very slow in developing physically and mentally, which causes great difficulty in daily activities.
Cannabis dependence	uses marijuana daily and has difficulty controlling the habit. The person sometimes has mood swings, anxiety and hallucinations, and has some difficulty in daily activities.
Amphetamine dependence	uses stimulants (drugs) and has difficulty controlling the habit. The person sometimes has depression, hallucinations and mood swings, and has difficulty in daily activities.
Cocaine dependence	uses cocaine and has difficulty controlling the habit. The person sometimes has mood swings, anxiety, paranoia, hallucinations and sleep problems, and has some difficulty in daily activities.
Heroin and other opioid dependence	uses heroin daily and has difficulty controlling the habit. When the effects wear off, the person feels severe nausea, agitation, vomiting and fever. The person has a lot of difficulty in daily activities.
Anxiety disorders: mild	feels mildly anxious and worried, which makes it slightly difficult to concentrate, remember things, and sleep. The person tires easily but is able to perform daily activities.
Anxiety disorders: moderate	feels anxious and worried, which makes it difficult to concentrate, remember things, and sleep. The person tires easily and finds it difficult to perform daily activities.
Anxiety disorders: severe	constantly feels very anxious and worried, which makes it difficult to concentrate, remember things and sleep. The person has lost pleasure in life and thinks about suicide.
Major depressive disorder: mild episode	has constant sadness and has lost interest in usual activities. The person can still function in daily life with extra effort, but sleeps badly, feels tired, and has trouble concentrating.
Major depressive disorder: moderate episode	has constant sadness and has lost interest in usual activities. The person has some difficulty in daily life, sleeps badly, has trouble concentrating, and sometimes thinks about harming himself (or herself).
Major depressive disorder: severe episode	has overwhelming, constant sadness and cannot function in daily life. The person sometimes loses touch with reality and wants to harm or kill himself (or herself).
Bipolar disorder: manic episode	is hyperactive, hears and believes things that are not real, and engages in impulsive and aggressive behavior that endanger the person and others.
Bipolar disorder: residual state	has mild mood swings, irritability and some difficulty with daily activities.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Schizophrenia: acute state	hears and sees things that are not real and is afraid, confused, and sometimes violent. The person has great difficulty with communication and daily activities, and sometimes wants to harm or kill himself (or herself).
Schizophrenia, residual state	hears and sees things that are not real and has trouble communicating. The person can be forgetful, has difficulty with daily activities, and thinks about hurting himself (or herself).
Anorexia nervosa	feels an overwhelming need to starve and exercises excessively to lose weight. The person is very thin, weak and anxious.
Bulimia nervosa	has uncontrolled overeating followed by guilt, starving, and vomiting to lose weight.
Attention deficit hyperactivity disorder	is hyperactive and has difficulty concentrating, remembering things, and completing tasks.
Conduct disorder	has frequent behavior problems, which are sometimes violent. The person often has difficulty interacting with other people and feels irritable.
Asperger's syndrome	has difficulty interacting with other people, and is slow to understand or respond to questions. The person is often preoccupied with one thing and has some difficulty with basic daily activities.
Autism	has severe problems interacting with others and difficulty understanding simple questions or directions. The person has great difficulty with basic daily activities and becomes distressed by any change in routine.
Intellectual disability: mild	has low intelligence and is slow in learning at school. As an adult, the person can work at simple supervised jobs and live independently, but often needs help to raise children.
Intellectual disability: moderate	has low intelligence and is slow in learning to speak and do simple tasks. As an adult, the person requires a lot of support to work productively, live independently and raise children.
Intellectual disability: severe	has low intelligence and cannot speak more than a few words, needs help with most basic daily activities, and can do only simple tasks under close supervision.
Intellectual disability: profound	has low intelligence, cannot understand basic requests or instructions, and requires constant assistance for nearly all activities.
<i>Hearing and vision loss</i>	
Hearing loss: mild	has difficulty following a conversation in a noisy environment but no other hearing problems.
Hearing loss: moderate	has difficulty hearing a normal voice and great difficulty following a conversation in a noisy environment.
Hearing loss: severe	has great difficulty hearing in any situation or in using a phone.
Hearing loss: profound	always has great difficulty hearing in any situation and is not able to use a phone.
Hearing loss: complete	cannot hear at all, even loud sounds.
Hearing loss: mild, with ringing	has great difficulty following a conversation in a noisy environment, and has ringing in the ears for more than 5 minutes, almost every day.
Hearing loss: moderate, with ringing	has difficulty hearing a normal voice or using a phone, has great difficulty following a conversation in a noisy environment, and has ringing in the ears for more than 5 minutes, almost every day.
Hearing loss: severe, with ringing	has great difficulty hearing in any situation or in using a phone, and has ringing in the ears for more than 5 minutes, almost every day.
Hearing loss: profound, with ringing	always has great difficulty hearing in any situation, cannot use a phone, and has ringing in the ears for more than 5 minutes, almost every day.
Hearing loss: complete, with ringing	cannot hear at all, even loud sounds, cannot use a phone, and has ringing in the ears for more than 5 minutes, almost every day.
Distance vision: mild impairment	has some difficulty with distance vision, for example reading signs, but no other problems with eyesight.
Distance vision: moderate impairment	has vision problems that make it difficult to recognize faces or objects across a room.
Distance vision: severe impairment	has severe vision loss, which causes difficulty in daily activities, some emotional impact (for example worry), and some difficulty going outside the home without assistance.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Distance vision blindness	is completely blind, which causes great difficulty in some daily activities, worry and anxiety, and great difficulty going outside the home without assistance.
Near vision impairment	has difficulty seeing things that are nearer than 3 feet, but has no difficulty with seeing things at a distance.
<i>Musculoskeletal disorders</i>	
Low back pain: acute, without leg pain	has severe back pain, which causes difficulty dressing, sitting, standing, walking, and lifting things. The person sleeps poorly and feels worried.
Low back pain: acute, with leg pain	has severe back and leg pain, which causes difficulty dressing, sitting, standing, walking, and lifting things. The person sleeps poorly and feels worried.
Low back pain: chronic, without leg pain	has constant back pain, which causes difficulty dressing, sitting, standing, walking, and lifting things. The person sleeps poorly, is worried, and has lost some enjoyment in life.
Low back pain: chronic, with leg pain	has constant back and leg pain, which causes difficulty dressing, sitting, standing, walking, and lifting things. The person sleeps poorly, is worried, and has lost some enjoyment in life.
Neck pain: acute, mild	has neck pain, and has difficulty turning the head and lifting things.
Neck pain: acute, severe	has severe neck pain, and difficulty turning the head and lifting things. The person gets headaches and arm pain, sleeps poorly, and feels tired and worried.
Neck pain: chronic, mild	has constant neck pain, and has difficulty turning the head, holding arms up, and lifting things.
Neck pain: chronic, severe	has constant neck pain and arm pain, and difficulty turning the head, holding arms up, and lifting things. The person gets headaches, sleeps poorly, and feels tired and worried.
Musculoskeletal problems: legs, mild	has pain in the leg, which causes some difficulty running, walking long distances, and getting up and down.
Musculoskeletal problems: legs, moderate	has moderate pain in the leg, which makes the person limp, and causes some difficulty walking, standing, lifting and carrying heavy things, getting up and down and sleeping.
Musculoskeletal problems: legs, severe	has severe pain in the leg, which makes the person limp and causes a lot of difficulty walking, standing, lifting and carrying heavy things, getting up and down, and sleeping.
Musculoskeletal problems: arms, mild	has mild pain and stiffness in the arms and hands. The person has some difficulty lifting, carrying and holding things.
Musculoskeletal problems: arms, moderate	has moderate pain and stiffness in the arms and hands, which causes difficulty lifting, carrying, and holding things, and trouble sleeping because of the pain.
Musculoskeletal problems: generalised, moderate	has pain and deformity in most joints, causing difficulty moving around, getting up and down, and using the hands for lifting and carrying. The person often feels fatigue.
Musculoskeletal problems: generalised, severe	has severe, constant pain and deformity in most joints, causing difficulty moving around, getting up and down, eating, dressing, lifting, carrying and using the hands. The person often feels sadness, anxiety and extreme fatigue.
Gout: acute	has severe pain and swelling in the leg, making it very difficult to get up and down, stand, walk, lift, and carry heavy things. The person has trouble sleeping because of the pain.
<i>Injuries</i>	
Amputation of finger(s), excluding thumb: long term, with treatment	has lost part of the fingers of one hand, causing difficulties in using the hand, pain, and tingling in the stumps.
Amputation of thumb: long term	has lost one thumb, causing some difficulty in using the hand, pain, and tingling in the stump.
Amputation of one arm: long term, with or without treatment	has lost one hand and part of the arm, leaving pain and tingling in the stump and flashbacks from the injury. The person requires help lifting objects and in daily activities such as cooking.
Amputation of both arms: long term, with treatment	has lost part of both arms, leaving pain and tingling in the stumps and flashbacks from the injury. The person has comfortable artificial arms and is mostly independent.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Amputation of both arms: long term, without treatment	has lost part of both arms, leaving pain and tingling in the stumps and flashbacks from the injury. The person needs help with basic daily activities such as eating and using the toilet.
Amputation of toe	has lost one toe, leaving occasional pain and tingling in the stump.
Amputation of one leg: long term, with treatment	has lost part of one leg, leaving pain and tingling in the stump. The person has a comfortable artificial leg and only slight difficulties moving around.
Amputation of one leg: long term, without treatment	has lost part of one leg, leaving pain and tingling in the stump. The person does not have an artificial leg, has frequent sores, and uses crutches.
Amputation of both legs: long term, with treatment	has lost part of both legs, leaving pain and tingling in the stumps. The person has two comfortable artificial legs, which allow for movement.
Amputation of both legs: long term, without treatment	has lost part of both legs, leaving pain, tingling, and frequent sores in the stumps. The person has great difficulty moving around and has episodes of depression, anxiety and flashbacks to the injury.
Burns of <20% total surface area without lower airway burns: short term, with or without treatment	has a burn on part of the body. Parts of the burned area are painful, and other parts have lost feeling.
Burns of <20% total surface area or <10% total surface area if head or neck, or hands or wrist involved: long term, with or without treatment	has scars caused by a burn. The scars are sometimes painful and itchy.
Burns of ≥20% total surface area: short term, with or without treatment	has a painful burn over a large part of the body. Parts of the burned area have lost feeling, and the person feels anxious and unwell.
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, with treatment	has scars caused by burns over a large part of the body. The scars are frequently painful and itchy, and the person is often sad.
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, without treatment	has severe, disfiguring and itchy scars caused by burns over a large part of the body. The person cannot move some joints, feels sad, and has great difficulty with self-care such as dressing and toileting.
Lower airway burns: with or without treatment	has a burn in the throat and lungs, which causes great difficulty breathing and a lot of anxiety.
Crush injury: short or long term, with or without treatment	had part of the body crushed, leaving pain, swelling, tingling and limited feeling in the affected area.
Dislocation of hip: long term, with or without treatment	walks with a limp and feels discomfort when walking.
Dislocation of knee: long term, with or without treatment	has a knee out of joint, causing pain and difficulty moving the knee, which sometimes gives way. The person needs crutches for walking and help with self-care such as dressing.
Dislocation of shoulder: long term, with or without treatment	has a shoulder that is out of joint, causing pain and difficulty moving. The person has difficulty with daily activities such as dressing and cooking.
Other injuries of muscle and tendon (includes sprains, strains and dislocations other than shoulder, knee, or hip)	has a strained muscle that causes pain and swelling.
Drowning and non-fatal submersion: short or long term, with or without treatment	has breathlessness, anxiety, cough, and vomiting.
Fracture of clavicle, scapula, or humerus: short or long term, with or without treatment	has a broken shoulder bone, which is painful and swollen. The person cannot use the affected arm and has difficulty with getting dressed.
Fracture of face bone: short or long term, with or without treatment	has a broken cheek bone, broken nose, and chipped teeth, with swelling and severe pain.
Fracture of foot bones: short term, with or without treatment	has a broken foot bone, which causes pain, swelling, and difficulty walking.
Fracture of foot bones: long term, without treatment	had a broken foot in the past that did not heal properly. The person now has pain in the foot and has some difficulty walking.
Fracture of hand: short term, with or without treatment	has a broken hand, causing pain and swelling.
Fracture of hand: long term, without treatment	has stiffness in the hand and a weak grip.
Fracture of neck of femur: short term, with or without treatment	has broken a hip and is in pain. The person cannot stand or walk, and needs help washing, dressing, and going to the toilet.
Fracture of neck of femur: long term, with treatment	had a broken hip in the past, which was fixed with treatment. The person can only walk short distances, has discomfort when moving around, and has some difficulty in daily activities.
Fracture of neck of femur: long term, without treatment	had a broken hip bone in the past, which was never treated and did not heal properly. The person cannot get out of bed and needs help washing and going to the toilet.
Fracture, other than neck of femur: short term, with or without treatment	has a broken thigh bone. The person has severe pain and swelling and cannot walk.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Fracture, other than neck of femur: long term, without treatment	had a broken thigh bone in the past, which was never treated and did not heal properly. The person now has a limp and discomfort when walking.
Fracture of patella, tibia or fibula, or ankle: short term, with or without treatment	has a broken shin bone, which causes severe pain, swelling, and difficulty walking.
Fracture of patella, tibia or fibula, or ankle: long term, with or without treatment	had a broken shin bone in the past that did not heal properly. The person has pain in the knee and ankle, and has difficulty walking.
Fracture of pelvis: short term	has a broken pelvis bone, with swelling and bruising. The person has severe pain, and cannot walk or do daily activities.
Fracture of pelvis: long term	had a broken pelvis in the past and now walks with a limp. There is often pain in the back and groin, and when urinating and sitting for a long time.
Fracture of radius or ulna: short term, with or without treatment	has a broken forearm, which causes severe pain, swelling, and limited movement.
Fracture of radius or ulna: long term, without treatment	had a broken forearm in the past that did not heal properly, causing some pain and limited movement in the elbow and wrist. The person has difficulty with daily activities such as dressing.
Fracture of skull: short or long term, with or without treatment	has a broken skull, but does not have brain damage. The broken area is painful and swollen.
Fracture of sternum or fracture of one or two ribs: short term, with or without treatment	has a broken rib that causes severe pain in the chest, especially when breathing in. The person has difficulty with daily activities such as dressing.
Fracture of vertebral column: short or long term, with or without treatment	has broken back bones and is in pain, but still has full use of arms and legs.
Fractures: treated, long term	has slight pain in a bone that was broken in the past.
Injured nerves: short term	has a nerve injury, which causes difficulty moving and some loss of feeling in the affected area.
Injured nerves: long term	had a nerve injury in the past, which continues to cause some difficulty moving. The person often injures the affected part because it is numb.
Injury to eyes: short term	has an injury to one eye, which causes pain and difficulty seeing.
Severe traumatic brain injury: short term, with or without treatment	cannot concentrate and has headaches, memory problems, dizziness, and feels angry.
Traumatic brain injury: long-term consequences, minor, with or without treatment	has episodes of headaches, memory problems, and difficulty concentrating.
Traumatic brain injury: long-term consequences, moderate, with or without treatment	has frequent headaches, memory problems, difficulty concentrating, and dizziness. The person is often anxious and moody.
Traumatic brain injury: long-term consequences, severe, with or without treatment	cannot think clearly and has frequent headaches, memory problems, difficulty concentrating and dizziness. The person is often anxious and moody, and depends on others for feeding, toileting, dressing and walking.
Open wound: short term, with or without treatment	has a cut in the skin, which causes pain and numbness around the cut.
Poisoning: short term, with or without treatment	has drowsiness, stomach pain and vomiting.
Severe chest injury: long term, with or without treatment	had a severe chest injury in the past that has now healed. The person still gets breathless when walking and feels discomfort in the chest.
Severe chest injury: short term, with or without treatment	has a serious chest injury, which causes severe pain, shortness of breath and anxiety.
Spinal cord lesion below neck: treated	is paralyzed from the waist down and cannot feel or move the legs. The person uses a lightweight and comfortable wheelchair to move around.
Spinal cord lesion below neck: untreated	is paralyzed from the waist down and cannot feel or move the legs. Legs are in fixed, bent positions, and the person gets frequent infections and pressure sores.
Spinal cord lesion at neck: treated	is paralyzed from the neck down and cannot feel or move the arms and legs.
Spinal cord lesion at neck level: untreated	is paralyzed from the neck down and cannot feel or move the arms and legs. Arms and legs are in fixed, bent positions, and the person gets frequent infections and pressure sores.
<i>Other</i>	
Abdominopelvic problem: mild	has some pain in the belly that causes nausea but does not interfere with daily activities.
Abdominopelvic problem: moderate	has pain in the belly and feels nauseous. The person has difficulties with daily activities.
Abdominopelvic problem: severe	has severe pain in the belly and feels nauseous. The person is anxious and unable to carry out daily activities.

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Appendix Table 2 (continued from previous page)

Health state	Lay description
Anaemia: mild	feels slightly tired and weak at times, but this does not interfere with normal daily activities.
Anaemia: moderate	feels moderate fatigue, weakness, and shortness of breath after exercise, making daily activities more difficult.
Anaemia: severe	feels very weak, tired and short of breath, and has problems with activities that require physical effort or deep concentration.
Periodontitis	has minor bleeding of the gums from time to time, with mild discomfort.
Dental caries: symptomatic	has a toothache, which causes some difficulty in eating.
Severe tooth loss	has lost more than 20 teeth including front and back, and has great difficulty in eating meat, fruits, and vegetables.
Disfigurement: level 1	has a slight, visible physical deformity that others notice, which causes some worry and discomfort.
Disfigurement: level 2	has a visible physical deformity that causes others to stare and comment. As a result, the person is worried and has trouble sleeping and concentrating.
Disfigurement: level 3	has an obvious physical deformity that makes others uncomfortable, which causes the person to avoid social contact, feel worried, sleep poorly, and think about suicide.
Disfigurement: level 1 with itch or pain	has a slight, visible physical deformity that is sometimes sore or itchy. Others notice the deformity, which causes some worry and discomfort.
Disfigurement: level 2, with itch or pain	has a visible physical deformity that is sore and itchy. Other people stare and comment, which causes the person to worry. The person has trouble sleeping and concentrating.
Disfigurement: level 3, with itch or pain	has an obvious physical deformity that is very painful and itchy. The physical deformity makes others uncomfortable, which causes the person to avoid social contact, feel worried, sleep poorly, and think about suicide.
Generic uncomplicated disease: worry and daily medication	has a chronic disease that requires medication every day and causes some worry but minimal interference with daily activities.
Generic uncomplicated disease: anxiety about diagnosis	has a disease diagnosis that causes worry about the future.
Iodine-deficiency goiter	has a large mass in the front of the neck. The person sometimes has weakness and fatigue, constipation and weight gain.
Kwashiorkor	is very tired and irritable and has diarrhea.
Severe wasting	is extremely skinny and has no energy.
Speech problems	has difficulty speaking, and others find it difficult to understand.
Motor impairment: mild	has some difficulty in moving around but is able to walk without help.
Motor impairment: moderate	has some difficulty in moving around, and difficulty in lifting and holding objects, dressing and sitting upright, but is able to walk without help.
Motor impairment: severe	is unable to move around without help, and is not able to lift or hold objects, get dressed or sit upright.
Motor plus cognitive impairments: mild	has some difficulty in moving around, and is slow in learning at school. The person can walk without help, work at simple supervised jobs and live independently, but often needs help to raise children.
Motor plus cognitive impairments: moderate	has some difficulty in moving around, holding objects, dressing and sitting upright, and is slow in learning to speak and do simple tasks. The person can walk without help, but requires a lot of help with daily activities.
Motor plus cognitive impairments: severe	cannot move around without help, and cannot lift or hold objects, get dressed or sit upright. The person also has low intelligence, speaks few words, and needs a lot of help with all basic daily activities.
Rectovaginal fistula	has an abnormal opening between her vagina and rectum causing flatulence and feces to escape through the vagina. The person gets infections in her vagina, and has pain when urinating.
Vesicovaginal fistula	has an abnormal opening between the bladder and the vagina, which makes her unable to control urinating. The woman is anxious and depressed.

Section 2. Statistical analysis

A. Analysis of paired comparisons

Paired comparison responses were analyzed using a probit regression model. The conceptual foundation for analyzing paired comparisons data derives from the work of Thurstone,⁶ as elaborated by Luce⁷ and formulated within a framework of statistical regression modeling by McFadden⁸ and others. The logic of the approach derives from the intuitive notion that a pair of health states that are similar in severity are likely to produce greater disagreement between respondents over which is healthier, compared to the alternative situation in which a pair of health states are very different in their severity. The statistical model formalizes this intuition based on the following specification. Each health state i is assumed to have an unobserved health level H_i , as perceived by an individual respondent. The respondent makes a choice in the paired comparison based on which of the two health states is regarded as ‘healthier,’ such that health state 1 is chosen over health state 2 if $H_1 > H_2$. If H_i is a normally distributed random variable with mean θ_i and variance σ_i^2 , then the difference $H_1 - H_2$ is also a normally distributed random variable, with mean $\theta_1 - \theta_2$ and variance $\sigma_1^2 + \sigma_2^2$. The probability of choosing health state 1 is equal to the probability that $H_1 - H_2 > 0$.

Based on this formulation, we can model responses to the paired comparison questions using probit regression. Specifically, we model a binary response variable Y , whereby $Y = 1$ connotes that the first health state in a paired comparison is chosen as the healthier one. Following the standard probit formulation, the model is given by

$$P(Y = 1|X) = \Phi(X'\beta)$$

where Φ is the cumulative distribution function of the standard normal distribution; X is a vector of explanatory variables; and parameters β are estimated by maximum likelihood. For paired comparison responses involving k health states, we define X as a vector of $k - 1$ indicator variables for all except one health state; the indicator variable takes the value 1 if the state is chosen as the healthier option in a paired comparison, -1 if the state is the non-chosen alternative, and 0 for all states other than the pair being considered. In this specification $X'\beta$ for a given comparison between health states 1 and 2 simplifies to the difference $\beta_1 - \beta_2$, which is related through an unknown linear function to the difference between the mean values, $\theta_1 - \theta_2$. The same linear function defines the relationship between each β_i (parameter in the regression model) and θ_i (underlying health-state value). Formally, $\beta_i = a\theta_i + b$, where a and b are determined by the arbitrary identifying assumptions that $\beta = 0$ for the omitted reference state, that $\sigma_i^2 = \sigma^2$ for all i , and that $2\sigma^2 = 1$. The implication of this is that the probit regression yields estimates of values for each health state that capture the relative differences in health levels between states, consistent with the paired comparison responses, but that these health-state values are on an arbitrary scale rather than on a unique disability weight scale that ranges between 0 and 1.

B. Analysis of population health equivalence

The population health equivalence questions provide information on tradeoffs between mortality and nonfatal outcomes, which is needed to anchor the results from the probit regression analysis of paired comparisons onto the (0,1) disability weight scale. Because the population health equivalence questions are framed in terms of a binary comparison between an intervention that averted 1000 fatalities and another intervention that averted some number of nonfatal outcomes, responses provide interval-censored information rather than exact values. For example, if a respondent indicates that a program that averted 1000 fatalities produced a greater health benefit than a program that averted 3000 cases of moderate angina, then this response is taken to indicate that the respondent attaches a disability weight to angina that lies somewhere in the interval between 0 and 0.33. Alternatively, if a respondent indicates that the program averting 3000 cases of moderate angina produced a greater health benefit than the program averting 1000 fatalities, then this observation indicates that the disability weight lies between 0.33 and 1.0.

All responses to population health equivalence questions in this study involved a single binary choice. Thus, all observations in the dataset are interval-censored.

We modeled responses to population health equivalence questions using interval regression. Prior empirical evidence on disability weights suggests that an assumption of normal variance that is constant across health states on the (0,1) scale is unlikely to hold, but that constant, normal variance in logit-transformed space is a reasonable approximation.⁹ We therefore use a censored normal regression model after applying a logit-transformation to the interval information. Specifically, we model the response probability Y , whereby $Y = 1$ connotes that the first program (which averts 1000 fatalities) is chosen as the one that has produced the greater health benefit. Defining c as the randomly assigned number of beneficiaries in the second program (i.e. the number of averted cases of a particular nonfatal health state, which is 3000 in the example above), a left-censored observation is implied by the choice of the first program, and the probability of such a response is given by

$$P(Y = 1|X, c) = \Phi\left(\frac{f(c) - X'\beta}{\sigma}\right)$$

where Φ is the standard cumulative normal; $f()$ is the logit function; X is a vector of indicator variables for health states; parameters β , estimated by maximum likelihood, are understood as logit-transformed disability weights for health states; and parameter σ , also estimated by maximum likelihood, is the standard deviation (in logit space) of the health-state value. Conversely, a right-censored observation, implied by the choice of the second program, has probability

$$P(Y = 0|X, c) = 1 - \Phi\left(\frac{f(c) - X'\beta}{\sigma}\right)$$

C. Rescaling of regression estimates from paired comparisons

As noted above, the probit regression of paired comparison responses yields values that are on an arbitrary scale with constant variance across health states. We therefore rescaled the probit coefficients in two steps. The first step was to run a linear regression of the probit coefficients from the pooled analysis on the disability weight estimates derived from interval regression of the population health equivalence responses in the web survey. For the reasons mentioned above, the rescaling was undertaken in logit-transformed space. This regression resulted in an estimated slope and intercept for a linear transformation of the probit coefficients onto the (logit-) disability-weight scale. The second step was to use numerical integration to obtain mean estimates of disability weights on the natural 0-to-1 scale. First, we simulated normal random variates on the logit scale with means defined by the rescaled probit coefficients and variance defined by the overall standard deviation of these coefficients across survey-specific estimates. Next, we transformed each of these simulated values through an inverse-logit function; and finally, we computed the mean across the resulting values for each health state.

D. Comparison across countries

To evaluate the consistency of health assessments across countries, we focused on comparisons of the results from the probit regression analysis on paired comparisons for the 108 health states in the household surveys. Our aim was to balance two objectives: the first, to undertake comparative analyses on measures that were relatively ‘close to the data’ in terms of having minimal additional structural assumptions placed on them; and the second, to be able to summarize the overall level of agreement across countries using standard measures of concordance. The first level of aggregation of individual paired comparison responses was the construction of heat maps, which summarized the data in terms of the overall choice probabilities for every possible pairwise comparison of health states. The probit regression analysis allowed us to collapse further the information contained in this 108×108 matrix of pair-level comparisons, into a vector of 108 scores for each health state that reflected the choice probabilities, accounting for

the relative strength of the ‘opponent’ in each comparison. Because the probit regression model is identified in part by fixing the value of the variance term in the model, each country-specific regression yields results on a scale that reflects the level of measurement error in that country’s data. We therefore made comparisons on a normalized scale, attained by linearly transforming each country’s probit coefficients to the common scale defined by the pooled analysis, with each linear function determined by ordinary least squares regression of the country-specific and pooled coefficient sets. We have not undertaken comparison of predicted *disability weights* by country (i.e. comparisons on the 0-to-1 scale derived through the steps described in Section 2C), because the disability weight scale results from a further, nonlinear transformation that reflects tradeoffs between mortality and nonfatal outcomes, which have not been assessed in the country-specific surveys. We therefore emphasize that the country comparisons in this paper evaluate the extent of agreement in the ways that different populations weigh different types of nonfatal health outcomes against one another, and not as evaluations of the ways that different populations weigh nonfatal health losses against losses due to mortality.

Section 3. Supplementary results

Comparing the new disability weights measured in this study to the weights used in the most recent round of global burden of disease estimates reported by the World Health Organization, for the year 2004,¹⁰ we identified 126 states in the present study that had corresponding sequelae in the prior study to accommodate comparison. Among these, some were directly comparable, in that the health states were specified consistently across the two studies. For others, there was some variation in the health-state definitions between the new and old versions (for example, the old study had one sequela for multiple sclerosis whereas the new study included mild, moderate and severe multiple sclerosis states), which implies that the comparisons are between outcomes that are similar but not identical.

Appendix Table 3 presents details on the comparisons between new and old weights, which are also summarized in Figure 5 in the main paper. We include uncertainty intervals for the new weights, but uncertainty estimates are not available for the comparators from WHO's 2004 GBD update.

Appendix Table 3 – Comparison between new disability weights and weights used in WHO's GBD update for 2004					
GBD 2010 health state	Weight	95% uncertainty interval		Cause – sequela in 2004 GBD update	Weight
Infectious disease: acute episode, mild	0·005	0·002	0·011	Schistosomiasis - infection	0·005
Infectious disease: acute episode, moderate	0·053	0·033	0·081	Pertussis - episodes	0·137
Infectious disease: acute episode, severe	0·210	0·139	0·298	Meningitis - episodes	0·615
Diarrhea: moderate	0·202	0·133	0·299	Diarrheal diseases - episodes	0·105
Epididymo-orchitis	0·097	0·063	0·137	Chlamydia - epididymitis	0·167
HIV cases: symptomatic, pre-AIDS	0·221	0·146	0·310	HIV/AIDS - HIV cases	0·135
HIV/AIDS cases: receiving ARV treatment	0·053	0·034	0·079	HIV/AIDS - AIDS cases on ART	0·167
AIDS cases: not receiving ARV treatment	0·547	0·382	0·715	HIV/AIDS - AIDS cases not on ART	0·505
Intestinal nematode infections: symptomatic	0·030	0·016	0·048	Ascariasis - intestinal obstruction	0·024
Lymphatic filariasis: symptomatic	0·110	0·073	0·157	Lymphatic filariasis - lymphoedema	0·106
Ear pain	0·018	0·009	0·031	Otitis media - chronic infection	0·023
Tuberculosis: without HIV infection	0·331	0·222	0·450	Tuberculosis - cases	0·271
Tuberculosis: with HIV infection	0·399	0·267	0·547	HIV/AIDS - AIDS cases not on ART	0·505
Cancer: diagnosis and primary therapy	0·294	0·199	0·411	Cancer - diagnosis / therapy	0·095
Cancer: metastatic	0·484	0·330	0·643	Cancer - metastasis	0·750
Mastectomy	0·038	0·022	0·059	Breast cancer - mastectomy	0·055
Stoma	0·086	0·055	0·131	Colorectal cancer - stoma	0·075
Terminal phase: with medication (for cancers, end-stage kidney/liver disease)	0·508	0·348	0·670	Cancer - terminal	0·810
Terminal phase: without medication (for cancers, end-stage kidney/liver disease)	0·519	0·356	0·683	Cancer - terminal	0·810
Acute myocardial infarction: days 1-2	0·422	0·284	0·566	Ischemic heart disease - acute myocardial infarction	0·439
Angina pectoris: moderate	0·066	0·043	0·095	Ischemic heart disease - angina pectoris, treated	0·095
Angina pectoris: severe	0·167	0·109	0·234	Ischemic heart disease - angina pectoris, untreated	0·227
Heart failure: moderate	0·070	0·044	0·102	Ischemic heart disease - congestive heart failure, treated	0·171
Heart failure, severe	0·186	0·128	0·261	Ischemic heart disease - congestive heart failure, untreated	0·323
Stroke: long-term consequences, moderate plus cognition problems	0·312	0·211	0·433	Cerebrovascular disease - long-term stroke survivors	0·266
Diabetic foot	0·023	0·012	0·039	Diabetes mellitus - diabetic foot	0·133
Diabetic neuropathy	0·099	0·066	0·145	Diabetes mellitus - neuropathy	0·072
End-stage renal disease: with kidney transplant	0·027	0·015	0·043	Nephritis and nephrosis - end-stage renal disease	0·098
Decompensated cirrhosis of the liver	0·194	0·127	0·273	Cirrhosis of the liver - symptomatic cases	0·330

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Appendix Table 3 (continued from previous page)

GBD 2010 health state	Weight	95% uncertainty interval		Cause – sequela in 2004 GBD update	Weight
Crohn's disease or ulcerative colitis	0.225	0.152	0.314	Peptic ulcer disease - cases not treated with antibiotics	0.042
Benign prostatic hypertrophy: symptomatic cases	0.070	0.046	0.102	Benign prostatic hypertrophy - symptomatic cases	0.038
Urinary incontinence	0.142	0.094	0.204	Prostate cancer - impotence / incontinence	0.060
Impotence	0.019	0.010	0.034	Prostate cancer - impotence / incontinence	0.060
Infertility: primary	0.011	0.005	0.021	Chlamydia - infertility	0.180
Infertility: secondary	0.006	0.002	0.013	Chlamydia - infertility	0.180
Asthma, partially controlled	0.027	0.015	0.045	Asthma - cases	0.043
COPD and other chronic respiratory problems: mild	0.015	0.007	0.028	COPD - mild and moderate symptomatic cases	0.170
COPD and other chronic respiratory problems: moderate	0.192	0.129	0.271	COPD - mild and moderate symptomatic cases	0.170
COPD and other chronic respiratory problems: severe	0.383	0.259	0.528	COPD - severe symptomatic cases	0.530
Dementia: moderate	0.346	0.233	0.475	Alzheimer and other dementias - cases	0.666
Headache: migraine	0.433	0.287	0.593	Migraine - cases	0.029
Multiple sclerosis: moderate	0.445	0.303	0.593	Multiple sclerosis - cases	0.411
Epilepsy: treated, seizure free	0.072	0.047	0.106	Epilepsy - cases, treated	0.065
Epilepsy: untreated	0.420	0.279	0.572	Epilepsy - cases, untreated	0.150
Parkinson's disease: moderate	0.263	0.179	0.360	Parkinson disease - cases, treated	0.316
Parkinson's disease: severe	0.549	0.383	0.711	Parkinson disease - cases, untreated	0.392
Alcohol use disorder: moderate	0.388	0.262	0.529	Alcohol use disorders - cases	0.134
Cannabis dependence	0.329	0.223	0.455	Drug use disorders - cases	0.252
Amphetamine dependence	0.353	0.215	0.525	Drug use disorders - cases	0.252
Cocaine dependence	0.376	0.235	0.553	Drug use disorders - cases	0.252
Heroin and other opioid dependence	0.641	0.459	0.803	Drug use disorders - cases	0.252
Anxiety disorders: mild	0.030	0.017	0.048	Panic disorder - cases, treated	0.091
Anxiety disorders: moderate	0.149	0.101	0.210	Panic disorder - cases, untreated	0.173
Major depressive disorder: mild episode	0.159	0.107	0.223	Unipolar depressive disorders - mild depressive episode	0.140
Major depressive disorder: moderate episode	0.406	0.276	0.551	Unipolar depressive disorders - moderate depressive episode	0.350
Major depressive disorder: severe episode	0.655	0.469	0.816	Unipolar depressive disorder - severe depressive episode	0.760
Bipolar disorder: manic episode	0.480	0.323	0.642	Bipolar affective disorder - cases, untreated	0.400
Bipolar disorder: residual state	0.035	0.021	0.055	Bipolar affective disorder - cases, treated	0.140
Schizophrenia: acute state	0.756	0.571	0.894	Schizophrenia - cases, untreated	0.627
Schizophrenia: residual state	0.576	0.399	0.756	Schizophrenia - cases, treated	0.351
Intellectual disability: mild	0.031	0.018	0.049	Iron deficiency anemia - cognitive impairment	0.024
Intellectual disability: severe	0.126	0.085	0.176	Meningitis - mental retardation	0.459
Hearing loss: mild	0.005	0.002	0.012	Hearing loss, adult onset - mild	0.000
Hearing loss: moderate	0.023	0.013	0.038	Hearing loss, adult onset - moderate, untreated	0.120
Hearing loss: severe	0.032	0.018	0.051	Hearing loss, adult onset - severe or profound, untreated	0.333
Hearing loss: profound	0.031	0.018	0.049	Hearing loss, adult onset - severe or profound, untreated	0.333
Distance vision: moderate impairment	0.033	0.020	0.052	Glaucoma - low vision	0.170
Distance vision blindness	0.195	0.132	0.272	Glaucoma - blindness	0.600
Low back pain: acute, without leg pain	0.269	0.184	0.373	Low back pain - episode of limiting low back pain	0.061
Musculoskeletal problems: legs, moderate	0.079	0.053	0.115	Osteoarthritis - knee, treated	0.108
Musculoskeletal problems: legs, severe	0.171	0.117	0.240	Osteoarthritis - knee, untreated	0.156

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Appendix Table 3 (continued from previous page)					
GBD 2010 health state	Weight	95% uncertainty interval		Cause – sequela in 2004 GBD update	Weight
Musculoskeletal problems: arms, moderate	0·114	0·077	0·159	Rheumatoid arthritis - cases, treated	0·174
Musculoskeletal problems: generalised, moderate	0·292	0·197	0·410	Rheumatoid arthritis - cases, untreated	0·233
Gout: acute	0·293	0·198	0·404	Gout - cases	0·132
Amputation of finger(s), excluding thumb: long term, with treatment	0·030	0·018	0·048	Amputation - finger	0·102
Amputation of thumb: long term	0·013	0·006	0·025	Amputation - thumb	0·165
Amputation of one arm: long term, with or without treatment	0·130	0·088	0·185	Amputation - arm	0·102
Amputation of toe	0·008	0·003	0·017	Amputation - toe	0·064
Amputation of one leg: long term, with treatment	0·021	0·011	0·035	Amputation - foot	0·300
Amputation of one leg: long term, without treatment	0·164	0·111	0·229	Amputation - leg	0·300
Burns of <20% total surface area without lower airway burns: short term, with or without treatment	0·096	0·062	0·140	Burns <20%, short-term	0·157
Burns of <20% total surface area or <10% total surface area if head or neck, or hands or wrist involved: long term, with or without treatment	0·018	0·010	0·032	Burns <20%, long-term	0·002
Burns of ≥20% total surface area: short term, with or without treatment	0·333	0·220	0·472	Burns >20% short-term	0·455
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, with treatment	0·127	0·086	0·183	Burns >20% long-term	0·255
Burns of ≥20% total surface area or ≥10% total surface area if head or neck, or hands or wrist involved: long term, without treatment	0·438	0·298	0·588	Burns >20% long-term	0·255
Crush injury: short or long term, with or without treatment	0·145	0·093	0·211	Crushing	0·218
Dislocation of hip: long term, with or without treatment	0·017	0·008	0·030	Dislocation of shoulder, elbow or hip	0·074
Dislocation of knee: long term, with or without treatment	0·129	0·087	0·178	Other dislocation	0·074
Dislocation of shoulder: long term, with or without treatment	0·080	0·053	0·116	Dislocation of shoulder, elbow or hip	0·074
Fracture of clavicle, scapula, or humerus: short or long term, with or without treatment	0·053	0·033	0·080	Fracture - clavicle, scapula or humerus	0·153
Fracture of face bone: short or long term, with or without treatment	0·173	0·111	0·257	Fracture - face bones	0·223
Fracture of foot bones: short term, with or without treatment	0·033	0·019	0·053	Fracture - foot bones	0·077
Fracture of hand: short term, with or without treatment	0·025	0·013	0·043	Fracture - hand bones	0·100
Fracture of neck of femur: short term, with or without treatment	0·308	0·205	0·439	Fracture - femur, short-term	0·372
Fracture of neck of femur: long term, with treatment	0·072	0·047	0·105	Fracture - femur, long-term	0·272
Fracture of neck of femur: long term, without treatment	0·388	0·261	0·532	Fracture - femur, long-term	0·272
Fracture of patella, tibia or fibula, or ankle: short term, with or without treatment	0·087	0·055	0·127	Fracture - patella, tibia or fibula	0·271
Fracture of pelvis: short term	0·390	0·257	0·545	Fracture - pelvis	0·247
Fracture of radius or ulna: short term, with or without treatment	0·065	0·040	0·101	Fracture - ulna or radius	0·180
Fracture of skull: short or long term, with or without treatment	0·073	0·046	0·109	Fracture - skull, short-term	0·431

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Appendix Table 3 (continued from previous page)

GBD 2010 health state	Weight	95% uncertainty interval		Cause – sequela in 2004 GBD update	Weight
Fracture of sternum or fracture of one or two ribs: short term, with or without treatment	0.150	0.098	0.215	Fracture - rib or sternum	0.199
Fracture of vertebral column: short or long term, with or without treatment	0.132	0.085	0.195	Fracture - vertebral column	0.266
Injured nerves: short term	0.065	0.040	0.096	Injured nerves - short-term	0.071
Injured nerves: long term	0.136	0.092	0.189	Injured nerves - long-term	0.071
Injury to eyes: short term	0.079	0.050	0.118	Injury to eyes - short-term	0.108
Severe traumatic brain injury: short term, with or without treatment	0.235	0.156	0.331	Intercranial injuries - short-term	0.359
Spinal cord lesion at neck: untreated	0.673	0.475	0.837	Injured spinal cord	0.725
Abdominopelvic problem: mild	0.012	0.005	0.023	Maternal haemorrhage - episodes	0.000
Abdominopelvic problem: moderate	0.123	0.083	0.176	Chlamydia - chronic pelvic pain	0.122
Abdominopelvic problem: severe	0.326	0.219	0.451	Appendicitis - episodes	0.463
Anaemia: mild	0.005	0.002	0.011	Iron-deficiency anemia - mild	0.000
Anaemia: moderate	0.058	0.038	0.086	Iron-deficiency anemia - moderate	0.011
Anaemia: severe	0.164	0.112	0.228	Iron-deficiency anemia - severe	0.090
Periodontitis	0.008	0.003	0.017	Periodontal disease - cases	0.001
Dental caries: symptomatic	0.012	0.005	0.023	Dental caries - episodes	0.081
Severe tooth loss	0.072	0.048	0.103	Edentulism - cases, untreated	0.061
Disfigurement: level 1	0.013	0.006	0.025	Leishmaniasis - cutaneous	0.023
Disfigurement: level 2	0.072	0.048	0.103	Skin diseases - cases	0.056
Disfigurement: level 2, with itch or pain	0.187	0.125	0.264	Onchocerciasis - itching	0.068
Generic uncomplicated disease: worry and daily medication	0.031	0.017	0.050	Diabetes mellitus - cases, treated	0.033
Severe wasting	0.127	0.081	0.183	Protein energy malnutrition - wasting	0.053
Motor impairment: moderate	0.076	0.050	0.109	Meningitis - motor deficit	0.381
Motor plus cognitive impairments: mild	0.054	0.033	0.084	Protein energy malnutrition - developmental disability	0.024
Motor plus cognitive impairments: moderate	0.221	0.141	0.314	Syphilis - tertiary - neurologic	0.283
Motor plus cognitive impairments: severe	0.425	0.286	0.587	Iodine deficiency - cretinism	0.804
Rectovaginal fistula	0.492	0.330	0.660	Obstructed labor - rectovaginal fistula	0.430

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