Chapter **3**

The Burden of Disease and Mortality by Condition: Data, Methods, and Results for 2001

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In 1993 the World Bank, in collaboration with the World Health Organization (WHO) and the Harvard School of Public Health, sponsored a study to assess the global burden of disease in 1990 (Murray, Lopez, and Jamison 1994; World Bank 1993). As well as generating the first comprehensive and consistent set of estimates of mortality and morbidity by age, sex, and region for the world, the Global Burden of Disease (GBD) study also introduced a new metric, the disability-adjusted life year (DALY), to quantify the burden of disease (Murray and Lopez 1996c, 1996d). The DALY is a summary measure of population health that combines years of life lost from premature death and years of life lived in less than full health and is described in more detail later. Thus, burden of disease analysis provides a unique perspective on health that integrates fatal and nonfatal outcomes, yet allows the two classes of outcomes to be examined separately as well.

The original (1990) GBD study analyzed and synthesized a large volume of data on population health to produce comprehensive and comparable information on the causes of loss of health globally and regionally, including low- and middle-income countries with considerable limitations in data availability and comparability. In addition, the GBD study made estimates even for diseases and conditions for which data were limited and involved considerable uncertainty to ensure that causes of the disease burden for which information was sparse were not implicitly considered to impose no burden and hence be ignored by health policy makers (Murray, Mathers, and Salomon 2003).

Under the leadership of Chris Murray, WHO's executive director of the Evidence and Information for Policy Cluster from 1998 to 2003, WHO undertook a new assessment of the global burden of disease for 2000 to 2002, with consecutive revisions and updates published annually in WHO's world health reports. Version 1 estimates for 2000 were published in the *World Health Report 2001* (WHO 2001d), and Version 3 estimates for 2002, with consistent back revision of the 2000 estimates, were published in the *World Health Report 2003* (WHO 2003b).

The editors of the second edition of *Disease Control Priorities in Developing Countries* (DCP2) (Jamison and others 2006) decided to use the Version 3 GBD estimates for

2001 to provide a common framework for assessing the causes of burden of disease in low- and middle-income countries and in analyzing priorities for interventions. We refer to these estimates as the GBD 2001. DCP2 measured the burden of disease in DALYs using a 3 percent discount rate, but without the nonuniform age weights used in the 1990 GBD study and in the results WHO published for 2000 to 2002.

This chapter documents the data sources and methods used to prepare the GBD 2001 estimates for DCP2 and provides an overview of the global and regional results for causes of disease and injury. The results presented here are those DCP2 used as a starting point for disease-specific economic and intervention analyses. The GBD 2001 incorporates a range of new data sources for developing internally consistent estimates of incidence, health state prevalence, severity, duration, and mortality for 136 major causes by sex and by eight age groups. It estimates deaths by cause, age, and sex for 226 countries and territories drawing on a total of 770 country-years of death registration data, as well as 535 additional sources of information on levels of child and adult mortality and in excess of 2,700 data sets providing information on specific causes of death in regions not well covered by death registration systems. Estimates of incidence, prevalence, severity, duration, and DALYs by cause, age, and sex drew on more than 8,500 data sources, including epidemiological studies, disease registers, and notification systems.

The results are presented here in terms of the World Bank's income and regional groupings of countries, which DCP2 used to facilitate matching causes of death and disease burden data with the economic and social data compilation in the *World Development Report 2003* (World Bank 2003). Countries are divided into seven groups: the high-income countries constitute one group and the low- and middle-income countries are divided into six geographical regions: East Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, the Middle East and North Africa, South Asia, and Sub-Saharan Africa (see annex table 3A.1 and map 1 inside the front cover). Annex 3A includes tables documenting definitions of cause and sequela categories and regional categories and summarizing country-specific sources of information on mortality and causes of death and the disability weights used for each cause-sequela category. The tables in annexes 3B and 3C include results for the low- and middle-income countries as a whole as well as for the six regional groups.

QUANTIFYING THE GLOBAL BURDEN OF DISEASE

We first give an overview of the GBD approach toward summarizing the health of populations and the disease and injury causes of loss of health through the use of a particular form of summary measure, the DALY, and discuss the value choices incorporated in the DALY.

The GBD Study

The simplest and most widely used method for producing population health statistics is to aggregate data on individuals to generate estimates of quantities, for example, the proportion of the population (or of a particular grouping by age or sex) suffering from a particular health problem, being in a particular health state, or dying from a specific cause in a defined time period. This approach rapidly becomes unwieldy when a number of problems are being monitored and the intent is to make comparisons over time, across population groups, or before and after specific health interventions, as in cost-effectiveness analyses. Policy makers then face an explosion in the number of statistics they must compare and difficulties in comparing indicators relating to different health states, mortality risks, or disease events. Such statistics on the health status of populations also suffer from several other limitations that reduce their practical value for policy makers:

- Health statistics are partial and fragmented. In many countries, basic information on causes of death is not available for all important causes, and even where mortality data are available, they fail to capture the impact of nonfatal outcomes of disease and injury, such as mental disorders, musculoskeletal disorders, blindness, or deafness, on population health.
- Analyses of incidence, prevalence, or mortality for single causes often result in overestimates, even when carried out by well-intentioned epidemiologists, if not constrained to fit within demographically plausible limits and to be internally consistent and consistent with information on other causes. These problems are compounded when estimates are carried out by groups in competition for scarce resources that are acting as advocates for affected populations or by groups carrying out program evaluation that are also responsible for program implementation (Murray, Lopez, and Wibulpolprasert 2004).
- Health statistics based on a compilation of separate measures of mortality and of incidence and prevalence

rates for a large number of conditions do not allow analysts or policy makers to evaluate outcomes of policies or to compare the relative cost-effectiveness of different interventions.

The 1990 GBD study developed a comprehensive framework for integrating, validating, analyzing, and disseminating fragmented information on the health of populations so that it is truly useful for health policy and planning (Murray and Lopez 1996b, 1996c, 1997a, 1997b). Features of this framework included the incorporation of data on nonfatal health outcomes into summary measures of population health (described in the next subsection), the development of methods and approaches to estimate missing data and to assess the reliability of data, and the use of a common metric to summarize the disease burden both from diagnostic categories of the International Classification of Diseases (ICD) and the major risk factors that cause those disease and injury outcomes.

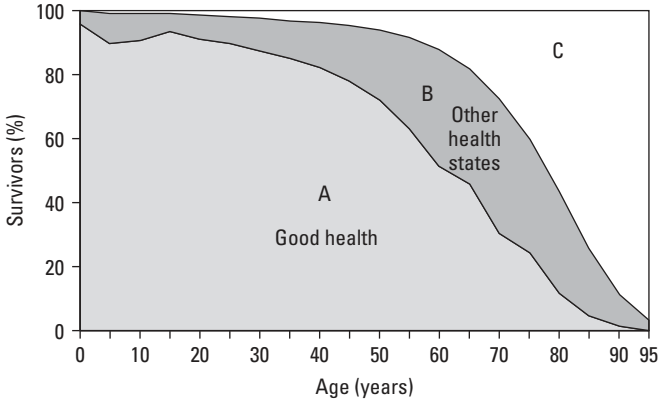
The basic philosophy guiding the burden of disease approach is that almost all sources of health data are likely to have information content provided that they are carefully screened for plausibility and completeness and that internally consistent estimates of the global descriptive epidemiology of major conditions are possible with appropriate tools, investigator commitment, and expert opinion. This philosophy remains central to the 2001 GBD study, which has expanded the framework of the 1990 GBD study to

- quantify the burden of premature mortality and disability by age, sex, and region for 136 causes;
- develop internally consistent estimates of incidence, prevalence, duration, and case fatality rates for more than 500 sequelae resulting from the foregoing causes;
- analyze the contribution to this burden of major physiological, behavioral, and social risk factors by age, sex, and region.

Summary Measures of Population Health and the DALY

To address the problems described above and to provide an outcome measure for cost-effectiveness analyses and priority-setting exercises, a common metric is required for mortality and for loss of health that can be disaggregated into disease and injury causes and risk factors. Since the mid-20th century, analysts have generally agreed that time is the most appropriate metric: time in years lived or lost because of mortality and years lived in various health states. Investigators have developed a wide range of such time-based summary measures of population health, many of them generalizations of life expectancy, such as disability-free life expectancy or variants of the so-called quality-adjusted life year (QALY). For assessing the health of populations, summary measures of population health provide a simple and useful digest of the vast array of components of population health (Murray, Salomon, and Mathers 2000; Wolfson 1999). Summary measures of population health do not replace the more detailed reporting of data for specific aspects of health and mortality or for specific causes of health problems; rather, they supplement these data by providing a metric that can be used to monitor trends and compare health across populations or for measuring health outcomes in cost-effectiveness analyses. The last two decades have seen a marked increase in interest in the development, calculation, and use of summary measures (Field and Gold 1998; Murray, Salomon, and others 2002a; Robine and others 2003).

Two classes of summary measures of population health have been developed: health expectancies, for example, disability-free life expectancy; active life expectancy, and healthy life expectancy; and health gaps, such as DALYs and healthy life years (figure 3.1). Health expectancies extend the concept of life expectancy to refer to expectations of various states of health or of the overall expectation of years of equivalent full health, not just of life per se. Health gaps are a complementary class of indicators that measure lost years



Source: Murray, Salomon, and Mathers 2000.

Note: The health gap is area C + f(B) where f(B) is a function of B in the range 0 to area B representing the lost equivalent years of full health lived in states B. The health expectancy is the area A + g(B), where g(B) = B − f(B) represents the equivalent years of full health lived in states B.

Figure 3.1 Relationship between Health Expectancies and Health Gaps in a Stationary Population

of full health against some normative ideal. Measures of potential years of life lost due to premature mortality have been used for many years to measure the mortality burden of various causes of death. These all measure the gap in years between age at death and some arbitrary standard age before which death is considered premature (typically 65 or 75). The DALY, developed for the GBD study, is an example of a health gap indicator that extends the notion of mortality gaps to include time lived in states other than excellent health.

One of the fundamental goals in choosing a summary measure of population health for quantifying the global burden of disease was to be able to identify the relative magnitude of different health problems, including diseases, injuries, and risk factors. A health gap measure was chosen because it permits categorical attribution of the fatal and nonfatal burden of diseases and injuries to an exhaustive and mutually exclusive set of disease and injury causes (Mathers, Ezzati, and others 2002; Murray, Salomon, and Mathers 2000). The lost years of health (or DALYs) are additive across such a set of disease or injury categories. By contrast, health expectancy measures do not naturally lend themselves to disaggregation by categorically defined causes. Instead, counterfactual methods such as disease elimination are required to quantify the contribution of disease causes to overall health expectancy measures, as well as for dealing with risk factors. Health gap measures also generally require counterfactual analysis to attribute the burden of disease to health determinants and risk factors, as discussed in chapter 4.

DALYs for a specific cause are calculated as the sum of the years of life lost due to premature mortality (YLL) from that cause and the years of healthy life lost as a result of disability (YLD) for incident cases of the health condition as follows:

$$DALY = YLL + YLD.$$

The YLL are essentially calculated as the number of cause-specific deaths multiplied by a loss function specifying the years lost as a function of the age at which death occurs. Ignoring for the moment other social preferences discussed later, the basic formula for YLL for a given cause *c*, age *a*, and sex *s* is as follows:

$$YLL(c,a,s) = N(c,a,s) \times L(a,s),$$

where $N(c,a,s)$ is the number of deaths due to cause *c* for given age *a* and sex *s* and $L(a,s)$ is the standard loss function in years for age *a* and sex *s*.

The 1990 GBD study did not use an arbitrary age cutoff such as 70 for the loss function used to calculate YLL, but instead specified the loss function in terms of the life expectancies at various ages in standard life tables, with life expectancy at birth fixed at 82.5 years for females and 80.0 years for males (Coale and Demeny West Model Levels 26 and 25, respectively, see Murray 1996), the highest observed life expectancies in the mid-1990s. The sex difference in the loss function was based on evidence of an intrinsic biological difference in life expectancy for males and females, but one that it is much less than the approximately five to seven years observed in developed countries (Murray 1996). Chapter 5 presents a more detailed specification of the loss function used in the standard DALY calculation.

Because YLL measure the incident stream of lost years of life due to deaths, an incidence perspective is also taken for the calculation of YLD. To estimate YLD for a particular cause during a particular time period, the number of incident cases in that period is multiplied by the average duration of the disease and a weight factor that reflects the severity of the resulting health states on a scale from 0 (perfect health) to 1 (dead). Again without yet considering other social preferences, the basic formula for YLD is as follows:

$$YLD(c,a,s) = I(c,a,s) \times DW(c,a,s) \times L(c,a,s),$$

where $I(c,a,s)$ is the number of incident cases for cause *c*, age *a*, and sex *s*; $DW(c,a,s)$ is the disability weight for cause *c*, age *a*, and sex *s*; and $L(c,a,s)$ is the average duration in years of the case until remission or death.

The valuation of time lived in nonfatal health states formalizes and quantifies social preferences for different states of health as disability weights. Depending on how these weights are derived, they are variously referred to as disability weights, QALY weights, health state valuations, or health state preferences. Because the DALY is measuring loss of health (unlike the QALY, which measures equivalent healthy years lived), the disability weights for DALYs are inverted, running from 0 (ideal health) to 1 (state comparable to death). Health state valuations are discussed in more detail later.

DALYs are not unique to the GBD study. The World Bank used a variant of DALYs in its seminal study of health sector priorities (Jamison and others 1993), which was derived from earlier work to develop time-based measures that reflected the public health impact of death or illness at different ages better than mortality or prevalence counts or rates (Dempsey 1947; Ghana Health Assessment Project Team 1981). As noted, DALYs are an inverse form of the more general concept of QALYs, proposed by Zeckhauser and Shepard (1976) and widely used in economic evaluations. DCP2 (Jamison and others 2006) and WHO's generalized cost-effectiveness

analyses for more than 170 health interventions (Tan-Torres Edejer and others 2003) use DALYs as the health outcome measure for their economic analyses.

Countries and health development agencies alike have widely adopted the burden of disease approach as the standard for health accounting, as well as for guiding the determination of health research priorities (Baskent University 2005; Bradshaw and others 2003; Bundhamcharoen and others 2002; Lozano and others 1995; Mahapatra 2002; Mathers and de Francisco 2004; Mathers, Vos, and Stevenson 1999; McKenna and others 2005; Vos and others 1995; WHO 1996).

Making Social Value Choices Explicit

In developing the DALY indicator, Murray (1996) identified three additional value choices that he argued should be made explicit in the formulation of the summary measure:

- How long "should" people in good health expect to live? This choice determines the loss function $L(a,s)$ for age a and sex s. Should the loss function be determined at the national level or globally? The DALY uses a global loss function that is the same for all people of a given age and sex, irrespective of other characteristics such as race, socioeconomic status, or occupation.
- Is a year of healthy life gained now worth more to society than a year of healthy life gained in 20 years' time? In other words, should time discounting be applied to the stream of incident lost healthy years represented by the DALY?
- Are lost years of healthy life valued more at some ages than others? Is a year of life at young adult ages valued more than in old age or infancy? In other words, should unequal age weights be applied to years of healthy life lost at different ages?

Much of the comment on and criticism of the GBD study focused on the explicit social value choices incorporated in the DALY (Anand and Hanson 1997, 1998; Hyder, Rotllanat, and Morrow 1998; Williams 1997, 1999), particularly the social choices pertaining to age weights and severity scores for disabilities, rather than on the uncertainty of the basic descriptive epidemiology. The latter, particularly in the least developed regions, is likely to be far more consequential for setting health priorities (see chapter 5). See Murray and Acharya (1997) and Murray and Lopez (2000) for responses to the criticisms of the value choices made for the 1990 GBD study.

Murray (1996) argues on equity grounds for use of the same life expectancy "ideal" standard for specifying years of life lost for a death in all population subgroups, whether or not their current life expectancy was lower than that of other groups. In addition, he argues that the same disability weight should be used for people of the same age in the same health state.

The DALY measures the future stream of healthy years of life lost due to each incident case of disease or injury and for each death. It is thus an incidence-based rather than a prevalence-based measure. The GBD study applied a 3 percent time discount rate to years of life lost in the future to estimate the net present value of years of life lost. With this discount rate, a year of healthy life gained in 10 years' time is worth 24 percent less than one gained now. Discounting future benefits is standard practice in economic analysis and the following specific arguments can be made for applying discounting to the DALY when measuring population health (Murray and Acharya 1997):

- to be consistent with the measurement of health outcomes in cost-effectiveness analyses;
- to prevent giving excessive weight to deaths at younger ages;
- to address the disease eradication and research paradox, that is, assuming that investment in research or disease eradication has a nonzero chance of succeeding, then without discounting, all current expenditure should be shifted to such investment because the future stream of benefits is infinite.

Chapter 5 examines the sensitivity of the burden of disease results to the choice of discount rate.

In addition to 3 percent time discounting, the 1990 GBD study (Murray 1996) and the GBD results reported in recent world health reports (WHO 2000, 2002d, 2004b) used nonuniform age weights that give less weight to years lived at younger and older ages in calculating DALYs. The inclusion of nonuniform age weights was based on human capital arguments and on a number of studies that suggest the existence of a broad social preference to value a year lived by a young adult more highly than a year lived by a young child or an older person (Murray 1996). At its extreme, age preference manifests as a lack of policy interest in any deaths at ages where the death is not considered premature.

The particular age weights used in the GBD study result in greater weight being given to all deaths below age 39 compared with deaths at older ages. Age weights have perhaps

been the most contentious social value incorporated into the DALY (Anand and Hanson 1997; Murray and Acharya 1997), and some national burden of disease studies have chosen not to use them (Mathers, Vos, and Stevenson 1999). The editors of DCP2 decided that uniform age weights should be used. Chapter 5 examines the sensitivity of the burden of disease results to different age weighting choices.

To denote different choices for discounting and age weights, we use the notation DALYs(r,K), where r is the discount rate in percent (not a fraction as in the GBD 1990) and K is the age-weighting modulation factor. The age weights used in the GBD are denoted by $K = 1$ and the nonuse of age weights (that is, uniform age weighting) is denoted by $K = 0$. Thus DALYs(3,0) denotes the DALY with 3 percent discounting and uniform age weights as used in DCP2 and DALYs(3,1) denotes the 3 percent discounting and varying age weights as used in the GBD study. Using DALYs(3,0), an infant death represents the loss of 30.3 DALYs(3,0) for males and 30.5 DALYs(3,0) for females, compared with 26.0 and 26.6 DALYs(3,0) at age 30 for males and females, respectively. A death at age 60 represents 16.0 DALYs(3,0) for males and 17.5 for females.

Comparing Time Lived in Different States of Health

To use time as a common currency for nonfatal health states and for years of life lost due to mortality, we must define, measure, and numerically value time lived in nonfatal health states. The valuation of time lived in nonfatal health states formalizes and quantifies social preferences for different states of health as health state weights. While death is not difficult to define, nonfatal health states are. They involve multiple domains of health that relate to different functions, capacities, or aspects of living. During the last three decades, there has been general acceptance of an approach to describing individuals' health states in terms of multiple domains of health and to developing self-reporting instruments that seek information on a core set of these domains, typically no more than five to eight, that capture most of the important variations in health states across individuals (McDowell and Newell 1996; Sadana 2002).

One common approach is to describe health as a profile of levels on a series of domains. The Medical Outcomes Study (MOS) Short Form 36 is an example of such an instrument, with eight domains covering self-perceived health, vitality, bodily pain, mental health, physical functioning, social functioning, physical role limitations, and social role limitations (Ware and Sherbourne 1992). MOS Short Form 36 domains are scored on continuous scales from 0 to 100, resulting in a large number of potential health states. Health state profiles intended for use with health state valuations tend to use a more limited number of levels in each domain.

Murray and colleagues argue that health state valuations should be conceptualized and operationalized as judgments about the overall level of health associated with a multidimensional description of an individual's health state, not about overall levels of well-being, quality of life, or utility (Murray, Salomon, and others. 2002b; Salomon, Mathers, and others 2003). In this conceptualization, health state valuations formalize the intuitive notion that health levels lie on a continuum and that we may characterize one individual as being more or less healthy than another individual at a particular moment in time. Health state valuations quantify departures from perfect health, that is, the reductions in health associated with particular health states. Note that these weights do not measure the quality of life of people with disabilities and do not measure the value of people to society.

By assigning a single number to an individual's health state with reference to ideal health, health state valuations permit aggregating individual health levels over time and comparing health across individuals, and thereby provide the critical link that allows individuals' nonfatal health experience to be combined with information about mortality in summary measures of population health. Researchers have developed a number of choice-based methods to measure preferences for health states (Salomon and Murray 2004).

The 1990 GBD used two forms of the person trade-off method and asked participants in weighting exercises to make a composite judgment about the severity distribution of the condition and the preference for time spent in each severity level (Murray 1996). This was largely necessitated by the lack of population information on the severity distribution of most conditions at the global and regional levels. The disability weights used in the GBD 2001 are still based in large part on the GBD 1990 disability weights (Murray 1996). Disability weights may vary by age, sex, and region, reflecting variations in the severity distributions of health states and the proportions of cases treated. A common global valuation function is assumed for the underlying health state valuations for specific health states. Despite the assertion by some commentators that valuations for certain health states are likely to be extremely heterogeneous across individuals and populations, empirical evidence suggests otherwise. Valuation studies carried out with deliberative small groups from a wide range of countries have found surprising consistency in valuations across cultures (Salomon and Murray 2002b). More recently, valuation studies carried out as part

of the WHO multicountry survey study have also found reasonable consistency in health state valuations for most health states (Salomon, Murray, and others 2003).

Following the GBD terminology, the term disability is used here broadly to refer to departures from optimal health in any of the important domains of health, including mobility, self-care, participation in usual activities, pain and discomfort, anxiety and depression, and cognition and social participation. We thus refer to disability weights and healthy years lost due to disability as shorthand terms for health state preferences and years of healthy life lost because of time lived in states other than the reference state of optimal health, respectively. Note that with this usage, disability, that is, states other than ideal health, may be short term or long term: a day with a common cold is a day with disability.

ESTIMATING DEATHS BY CAUSE: METHODS AND DATA

Complete death registration data cover only one-third of the world's population. Some information on another third is available through the urban death registration systems and national sample registration systems of China and India. For the remaining one-third of the world's population, including most countries in Sub-Saharan Africa, only partial information is available from epidemiological studies, disease registers, and surveillance systems.

The original (1990) GBD study was the first attempt to estimate the global and regional numbers of deaths resulting from a comprehensive set of causes while ensuring consistency with death totals provided by death registration and demographic methods (Murray and Lopez 1996c). Ensuring this consistency was a major advance and is an essential first step in measuring the disease burden. Estimates of numbers of deaths carried out separately for individual causes that are not constrained to sum to a demographically derived total often result in substantial overestimates of deaths from each cause (Jamison 1996). In part, this occurs because in carrying out analysis for a single cause, researchers may easily be overinclusive in counting the deaths attributable to the cause of interest, even without any intent to maximize the size of the specific problem.

Thus, the first analytical step in estimating deaths by cause was to estimate age-specific total death rates by sex. The importance of this step cannot be overemphasized. The number of deaths by age and sex provided an essential "envelope" that constrained individual disease and injury estimates of deaths. Competing claims for the magnitude of deaths from various causes must then be reconciled within this envelope.

Next, to estimate the number of deaths by cause we drew on the following four broad sources of data:

- *Death registration systems.* Complete or incomplete death registration systems provide information about causes of death for almost all high-income countries and for many countries in Europe (Eastern) and Central Asia and in Latin America and the Caribbean. Some vital registration (VR) information is also available in all other regions.
- *Sample death registration systems.* In China and India, sample registration systems for rural areas supplement urban death registration systems. Information systems now provide data on causes of death for several other large countries for which information was not available at the time of the original GBD study.
- *Epidemiological assessments.* Epidemiologists have estimated deaths for specific causes, such as HIV/AIDS, malaria, and tuberculosis (TB), for most countries in the regions most affected. These estimates usually combine information from surveys on the incidence or prevalence of the disease with data on case fatality rates.
- *Cause of death models.* The cause of death models used in the original GBD study (Murray and Lopez 1996a) were substantially revised and enhanced for estimating deaths by broad cause group in regions with limited information on mortality. The CodMod software developed for this study and described later drew on a data set of 1,613 country-years of observation of cause of death distributions from 58 countries between 1950 and 2001.

All-Cause Mortality for 192 Countries

According to data provided by 112 WHO member states, only about one-third of the estimated 56 million deaths occurring annually are recorded in death registration systems. If the sample registration systems of China and India are considered to provide information on their entire populations, then information is available for around 72 percent of the global population. In recent years, considerable priority has also been given to obtaining data on child and maternal mortality through such instruments as the Demographic and Health Survey (DHS) program funded by the U.S. Agency for International Development and the Multiple Indicator Cluster Survey program carried out by the United Nations Children's Fund. Table 3.1 summarizes sources of information on levels of child and adult all-cause

Table 3.1 Availability of Data for Estimation of All-Cause Mortality Rates by Age and Sex

Type of data	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	High-income countries	Total
Number of countries with all-cause mortality data								
Death registration data for 2001								
Complete	1	11	2	1	0	1	25	41
Incomplete[a]	1	6	5	0	1	0	2	15
Death registration data for years prior to 2001[b]								
Complete	1	0	3	0	0	0	5	9
Incomplete[a]	3	9	13	1	1	2	2	31
Data for levels of child and adult mortality	12	1	6	9	4	2	3	37
Data for levels of child mortality only	4	0	3	4	2	42	0	55
Number of data collections								
Country-years of death registration data								
2001 available	4	17	7	1	1	1	28	59
2001 not available[c]	89	132	279	45	23	29	114	711
Other sources of information on child and adult mortality	70	22	122	67	48	190	16	535
Total data sets used	163	171	408	113	72	220	158	1,305

Source: Authors' compilation.

a. Completeness of death registration data was assessed using standard demographic methods (see text).

b. Includes countries where death registration data for years prior to 2001 were used to project levels of child and adult mortality to construct a life table based on a country standard derived from the last available year of death registration data.

c. Also includes countries where death registration data were used to project levels of child and adult mortality as inputs to the WHO logit life table system using a global standard.

mortality used to construct life tables for 192 WHO member states by region and by type of data.

For countries with death registration data, demographic techniques (Preston-Coale, Brass growth-balance, generalized growth-balance, and Bennett-Horiuchi methods) were first applied, as appropriate, to assess the extent of completeness of the recorded mortality data for adults. If the data coverage estimates were high enough to be meaningful, death rates for those aged five years and over were then adjusted accordingly. The completeness of death registration for children was assessed separately using other available sources of information on child mortality. For countries without usable VR data, other available sources of adult mortality such as surveys and censuses were used to estimate the level of adult mortality as measured by ${}_{45}q_{15}$ (the probability of dying between exact ages 15 and 60). For child mortality under five, again, all available survey, census, and VR data were assessed, adjusted, and averaged to estimate the probable trend in child mortality (${}_5q_0$) in recent decades.

The population estimates used for all countries were those prepared by the United Nations Population Division (2003). Note that these estimates refer to de facto populations, that is, they include residents such as guest workers and refugees, rather than de jure populations, meaning citizens, and in some countries, permanent residents. Member states that report death registration data to WHO also routinely report population data for the population the death registration system covers, which in some cases is a subset of the national population. Death registration data may cover less than 100 percent of the population not only because some geographical areas may be excluded, but also because registration may be restricted to a subset of the resident population, such as citizens, and may thus exclude deaths among groups such as guest workers or refugees.

For the GBD 2001 study, age- and sex-specific death rates were calculated from the death and population data provided by countries, with adjustments made for completeness of the registration data where needed, and then total deaths by age and sex were calculated for each country by applying

these rates to the United Nations Population Division estimates of de facto populations for 2001.

Four methods were used to construct life tables for each country depending on the type of data available (Lopez and others 2002):

- *Countries with death registration data for 2001.* Such data were used directly to construct life tables for 56 countries after adjusting for incomplete registration if necessary.
- *Countries with a time series of death registration data.* Where the latest year of death registration data available was prior to 2001, a time series of annual life tables (adjusted if the registration level was incomplete) between 1985 and the latest available year was used to project levels of child and adult mortality for 2001. For small countries with populations of less than 500,000, moving averages were used to smooth the time series. Projected values of child and adult mortality were then applied to a modified logit life table model (Murray, Ferguson, and others 2003), using the most recent national data as the standard, to predict the full life table for 2001, and HIV/AIDS and war deaths were added to total mortality rates for 2001 where necessary. This method was applied for 40 countries using a total of 711 country-years of death registration data.
- *Countries with other information on levels of child and adult mortality.* For 37 countries, estimated levels of child and adult mortality were applied to a modified logit life table model (Murray, Ferguson, and others 2003), using a global standard, to estimate the full life table for 2001, and HIV/AIDS deaths and war deaths were added to total mortality rates as necessary. For most of these countries, data on levels of adult mortality were obtained from death registration data, official life tables, or mortality information derived from other sources such as censuses and surveys. The all-cause mortality envelope for China was derived from a time series analysis of deaths for every household in China reported in the 1982, 1990, and 2000 censuses. The extent of underreporting of deaths in the 2000 census was estimated at about 11.3 percent for males and 18.1 percent for females (Bannister and Hill 2004). The all-cause mortality envelope for India was derived from a time series analysis of age-specific death rates from the Sample Registration System after correction for underregistration (88 percent completeness) (Mari Bhat 2002).
- *Countries with information on levels of child mortality only.* For 55 countries, 42 of them in Sub-Saharan Africa, no information was available on levels of adult mortality. Based on the predicted level of child mortality in 2001, the most likely corresponding level of adult mortality (excluding HIV/AIDS deaths where necessary) was selected, along with uncertainty ranges, based on regression models of child versus adult mortality as observed in a set of almost 2,000 life tables judged to be of good quality (Lopez and others 2002; Murray, Ferguson, and others 2003). These estimated levels of child and adult mortality were then applied to a modified logit life table model, using a global standard, to estimate the full life table in 2001, and HIV/AIDS deaths and war deaths were added to total mortality rates as necessary. Evidence on adult mortality in Sub-Saharan African countries remains limited, even in areas with successful child and maternal mortality surveys.

Classification of Causes of Disease and Injury

Disease and injury causes of death and of burden of disease were classified using the same tree structure as in the original GBD study (Murray and Lopez 1996c). The first level of disaggregation comprises the following three broad cause groups:

- Group I: communicable, maternal, perinatal, and nutritional conditions
- Group II: noncommunicable diseases
- Group III: injuries.

Each group was then divided into major cause subcategories, for example, cardiovascular disease (CVD) and malignant neoplasms (cancers) are two major cause subcategories of Group II. Beyond this level, two further disaggregation levels were used, resulting in a complete cause list of 136 categories of specific diseases and injuries. Annex table 3A.2 lists the GBD 2001 cause categories and their ICD codes in terms of the ICD 9th revision (ICD-9) and 10th revision (ICD-10) (WHO 1977, 1992).

Group I causes of death consist of the cluster of conditions that typically decline at a faster pace than all-cause mortality during the epidemiological transition. In high-mortality populations, Group I dominates the cause of death pattern, whereas in low-mortality populations, Group I accounts for only a small proportion of deaths. The major cause subcategories are closely based on the ICD chapters with a few significant differences. Whereas the ICD classifies chronic respiratory diseases and acute respiratory infections into the same chapter, the GBD cause classification includes acute respiratory infections in Group I and

chronic respiratory diseases in Group II. Note also that the Group I subcategory of "causes arising in the perinatal period" relates to the causes included in the corresponding ICD chapter, principally low birthweight, prematurity, birth asphyxia, and birth trauma, but does not include all causes of deaths occurring during the perinatal period, such as infections, congenital malformations, and injuries. In addition, the GBD includes only deaths among children born alive and does not estimate stillbirths (see chapter 6).

The development and successive revisions of the ICD have facilitated the comparability of cause of death data within and across countries. Although each revision has produced some discontinuities in cause of death data, the revision from ICD-9 to ICD-10 resulted in more substantial changes than previous revisions. ICD-10 is considerably more detailed than ICD-9, with almost twice the number of codes, and includes both conceptual and classification revisions as well as changes in the coding rules used to select the underlying cause of death. Additional problems in comparing data on causes of death across countries arise from variations in the accuracy of diagnoses of causes of death.

In most developed countries, medical practitioners certify the underlying cause of death even though they may not always have had prior contact with the deceased or access to relevant medical records. In developing countries, a significant proportion of deaths may occur without medical attention and such deaths may be registered without a medical opinion about the cause of death. At the same time, selecting a single underlying cause of death is often problematic for the elderly, who have often had several chronic diseases that concurrently led to their death. This results in higher levels of uncertainty about cause of death distributions in the oldest age group. Finally, in both developing and developed countries, legal, societal, and other reasons may lead to the underreporting of causes of death of a sensitive nature, such as suicide or HIV/AIDS. For this reason, other sources of information for specific causes such as HIV/AIDS, illicit drug use, and war have been used where necessary to modify cause-specific estimates based on death registration data.

The GBD classification system does not include the ICD category "symptoms, signs, and ill-defined conditions" as one of the major causes of deaths. The GBD classification scheme has reassigned deaths assigned to this ICD category, as well as some other codes used for ill-defined conditions, to specific causes of death. This is important from the perspective of generating useful information to compare cause of death patterns or to inform health policy making, because it allows unbiased comparisons of cause of death patterns across countries or regions.

Deaths are categorically attributed to one underlying cause using ICD rules and conventions. In some cases where the ICD rules are ambiguous, the GBD 2001 follows the conventions used by the GBD 1990 study (Murray and Lopez 1996a). Note also that a number of causes of death act as risk factors for other diseases. Total mortality attributable to such causes may be substantially larger than the mortality estimates for the cause in terms of ICD rules for underlying causes. For example, the GBD 2001 estimates that 960,000 deaths were due to diabetes mellitus as an underlying cause, but when deaths from CVD and renal failure attributable to diabetes are included, the global total of attributable deaths rises to almost 3 million (Roglic and others 2005). Other causes for which important components of attributable mortality are included elsewhere in the GBD cause list include hepatitis B or C (mortality attributable to liver cancer and renal failure), unipolar or bipolar depressive disorders and schizophrenia (mortality attributable to suicide), and blindness (mortality attributable to blindness whether from infectious or noninfectious causes).

Countries with Complete or Incomplete Death Registration Data

In the last decade, computerization of death registration data at the country level and electronic transmission to WHO have considerably improved the timeliness of information. In addition, the number of countries submitting their underlying cause of death data to WHO using ICD-10 increased from 4 in 1995 to 75 in 2003. Some 50 countries are still reporting data using ICD-9 and only 1 country is still using ICD-8 (Mathers and others 2005).

Several new features and changes from ICD-9 to ICD-10 have a major impact on the interpretation of statistical data, and the implications of these changes have been taken into account to a limited extent when making trend comparisons and estimations for causes of death. ICD-10 is more detailed, with about 10,000 codes compared with around 5,100 in ICD-9, and the rules for selecting the underlying cause of death have been reevaluated and sometimes changed. For example, ICD-10 considers pneumonia to be a consequence of a much wider range of conditions than ICD-9, and it therefore would be less likely to be selected as the underlying cause. Modification of the death certificate with the inclusion of an additional line in part 1 of the certificate (for diseases related to the chain of events leading directly to death) as recommended by WHO may also have had an impact on the selection of the underlying cause of death.

Accuracy in diagnosing causes of death still varies substantially across countries with death registration systems. In addition, even in countries where medically qualified staff assign causes of death, some degree of misattribution or miscoding occurs during the process of coding underlying causes of death, mainly because of incorrect or systematic biases in diagnoses, incorrect or incomplete death certificates, misinterpretation of ICD rules for selecting underlying causes, and variations in the use of categories for unknown and ill-defined causes (Mathers and others 2005).

Death registration data containing usable information on cause of death distributions were available for 107 countries, mostly in the high-income group, Europe and Central Asia, and Latin America and the Caribbean (table 3.2, annex table 3A.3). Where the latest available year was earlier than 2001, death registration data from 1980 through the latest available year were analyzed as a basis for projecting recent trends for specific causes, and these trend estimates were used to project the cause distribution for 2001. When estimating cause of death distributions for very small countries, an average of the three last years of data was used to minimize stochastic variation.

In the case of the few countries still reporting data using the condensed ICD-9 Basic Tabulation List, algorithms based on data from countries with more detailed coding were applied to estimate deaths due to asthma as no Basic Tabulation List code for asthma is available. Also, China and some of the newly independent states of the former Soviet

Table 3.2 Availability of Data for Estimation of Causes of Death by Age and Sex

Type of data	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	High-income countries	Total
			Number of countries					
Death registration data (coverage of 85% or more)[a]	1	11	5	1	0	1	29	48
Death registration data (coverage <85%) – adjusted using cause-of-death models	5	16	25	3	1	3	5	58
Sample registration and surveillance[b]	2	0	0	1	1	1	0	5
No data–cause-of-death models used with detailed cause patterns based on regional data	14	0	2	10	6	42	3	77
Epidemiological estimates for mortality due to specific causes used where applicable	[c]	[d]	[c]	[c]	[c]	[c]	[e]	[c]
			Percent of population					
Death registration data (coverage of 85% or more)[a]	0.0	52.7	13.0	0.1	0.0	0.2	94.4	19.5
Death registration data (coverage <85%) – adjusted using cause-of-death models	5.6	47.3	84.2	50.0	1.4	8.6	5.3	17.1
Sample registration and surveillance[b]	73.3	0.0	0.0	1.7	74.5	1.4	0.0	39.1
No data–cause-of-death models used with detailed cause patterns based on regional data	21.1	0.0	2.9	48.1	24.2	89.8	0.3	24.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' compilation.

a. The threshold of coverage of 85 percent used for causes of death differs from that used for registration of deaths (95 percent) because the biases from underreporting of the fact of death are more serious for assessing levels of all-cause mortality than for assessing the distribution of causes.

b. Includes countries with death registration or surveillance systems relying heavily on verbal autopsy methods for ascertaining causes of death.

c. HIV/AIDS, tuberculosis, measles, pertussis, poliomyelitis, tetanus, acute lower respiratory infections, Chagas' disease, maternal conditions, perinatal conditions, cancers, drug use disorders, rheumathoid arthritis, and war. See table 3.5 for details.

d. AIDS, drug use disorders, and war. See table 3.5 for details.

e. Drug use disorders and war. See table 3.5 for details.

Union still use some special condensed ICD-9 cause of death classifications, which were then mapped to the GBD cause list. Missing values for some GBD conditions were estimated with the use of algorithms. Similarly, algorithms were also applied for countries reporting data using the condensed ICD-10 Mortality Tabulation List 1.

Deaths resulting from war are not systematically included in the cause of death data. For example, in the United States, the Department of Defense records deaths resulting from war, and for security reasons they are not included in the death registration system. Some death registration data undercount deaths due to HIV/AIDS and drug use partly because of miscoding and partly because of reluctance to record these diagnoses. In some cases, adjustments for deaths due to war, HIV/AIDS, and drug use have been made using other sources of information as described later.

Cause of death data were carefully analyzed to take incomplete coverage of VR into account and the likely differences in cause of death patterns among the uncovered and often poorer subpopulations. When the coverage of death registration data was assessed as less than 85 percent, cause of death modeling was used to adjust the proportions of deaths occurring in Groups I, II, and III by age and sex. Table 3.2 shows the regional distribution of the 58 countries for which such adjustments were carried out. In total, useful information on cause of death distributions was available for 37 percent of the world's population, or 76 percent if China and India's sample registration and mortality surveillance systems were included. Usable death registration information was available for only four Sub-Saharan African countries: Mauritius, the Seychelles, South Africa, and Zimbabwe. Death registration data are available for several other Sub-Saharan African countries, but are largely restricted to deaths in urban hospitals, with overall coverage being too low to provide useful population-level information on cause of death distributions (Rao, Bradshaw, and Mathers 2004).

Annex table 3A.3 summarizes the years of death registration data with information on underlying cause available for each country, together with information on the methods used to estimate cause of death distributions. As shown in table 3.1, a total of 770 country-years of death registration data were used in the analysis of causes of death for the GBD 2001.

Redistribution of Ill-Defined Causes and "Garbage Codes"

Even in countries where medically qualified staff assign causes there is substantial use of coding categories for unknown and ill-defined causes. In addition to the ICD codes for "symptoms, signs, and ill-defined conditions" (ICD-9 codes 780–799 and ICD-10 codes R00–R99), a number of other ICD codes do not represent useful underlying causes from a policy perspective and their inappropriate overuse compromises the usefulness of information on causes of death. These garbage codes or ill-defined codes include deaths from injuries where the intent was not determined (ICD-9 codes E980–989 and ICD-10 codes Y10–Y34 and Y872); CVD categories lacking diagnostic meaning, such as cardiac arrest and heart failure (ICD-9 codes 427.1, 427.4, 427.5, 428, 429.0, 429.1, 429.2, 429.9, and 440.9; and ICD-10 codes I47.2, I49.0, I46, I50, I51.4, I51.5, I51.6, I51.9, and I70.9); and cancer deaths coded to categories for secondary or unspecified sites (ICD-9 codes 195 and 199 and ICD-10 codes C76, C80, and C97). The percentage of deaths coded as ill-defined causes varies from 4 percent in New Zealand to more than 40 percent in Sri Lanka and Thailand.

Table 3.3 shows the distribution of deaths assigned to ill-defined codes for the 105 WHO member states reporting data on death registrations since 1990 with at least 50 percent completeness or coverage. The median percentage of deaths coded to ill-defined causes was 12 percent; the median percentage of symptoms, signs, and ill-defined conditions was 4.0 percent; and the median of ill-defined cardiovascular causes was 5.3 percent. In more than 15 high-income countries, more than 10 percent of deaths were coded to these ill-defined conditions, not so much because of overuse of codes for symptoms, signs, and ill-defined conditions, but because of excessive use of garbage codes for CVD, cancers, and injuries (Mathers and others 2005).

To produce unbiased estimates of cause-specific death rates, and to maximize comparability across member states, deaths coded to general ill-defined categories (ICD- 9, chapter XVI; ICD-10, chapter XVIII) were redistributed pro rata across all Group I and Group II causes, that is, all causes excluding injuries. Correction algorithms were also applied to resolve problems of miscoding for the cardiovascular, cancer, and injury garbage codes.

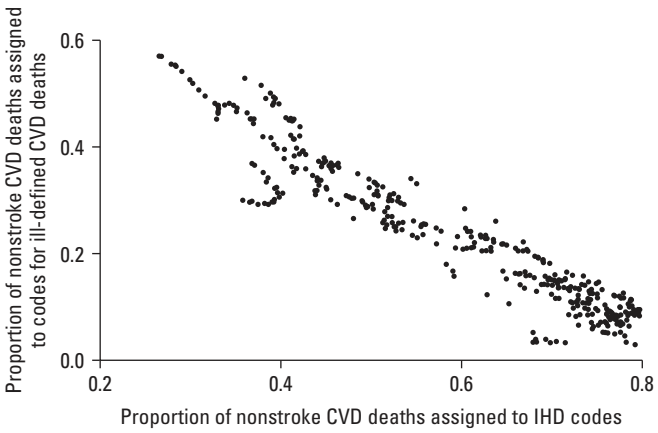
Ill-Defined Cardiovascular Codes. Physicians may use a number of cardiovascular codes in ICD-9 and ICD-10 to assign deaths that are actually due to ischemic heart disease (IHD). They may assign IHD deaths to ill-defined cardiovascular codes because of insufficient clinical information at the time of death, local medical diagnostic practices, or simply by error. These include codes for heart failure, ventricular dysrhythmias, generalized atherosclerosis, and ill-defined descriptions and complications of heart disease.

Table 3.3 Distribution of Percentage of Total Deaths Assigned to Ill-Defined Codes for 105 WHO Member States, Most Recent Available Year

	Percentage of deaths assigned to ill-defined codes			
Ill-defined code group	**Median**	**25th percentile**	**75th percentile**	**Maximum**
Symptoms	4.0	2.1	8.7	44.0
Injury	0.5	0.2	1.3	5.1[a]
Cancer	1.0	0.5	1.5	2.7
Cardiovascular disease	5.3	2.7	7.7	23.4
Total ill-defined	12.0	7.0	17.2	48.8

Source: Mathers and others 2005.
Note: Table includes those countries supplying data on death registration for most recent year since 1990 and with at least 50 percent completeness or coverage.
a. These data exclude South Africa, where 93 percent of deaths from external causes were coded to ill-defined injuries.

Figure 3.2 illustrates the enormous variation across countries in coding practice with respect to these ill-defined cardiovascular codes. For each country, the fraction of cardiovascular deaths (excluding stroke) assigned to the ill-defined cardiovascular codes is plotted against the fraction of cardiovascular deaths (excluding stroke) assigned to IHD (ICD-9 codes 410–414 or ICD-10 codes I20–I25). The strong negative relationship between IHD mortality and that from the ill-defined CVD codes ($r^2 = 0.90$) strongly supports the hypothesis that the quality of CVD death certification varies substantially across countries. The upper left portion of figure 3.2 shows countries where doctors certified, on average, more ill-defined CVD than IHD deaths, and these include France, Japan, Portugal, and Spain. The bottom right corner of the figure shows those countries where doctors assign, on average, a small proportion of ill-defined CVD deaths. This second group includes Australia, Canada, Finland, New Zealand, Norway, and the United Kingdom (Scotland). We refer to these two groups of countries as the high ill-defined coding and low ill-defined coding groups.



Source: Lozano and others 2001.

Figure 3.2 Variation across Selected Countries in Coding for Ill-Defined CVD Causes, 1979–98

To correct for the likely underregistration of IHD in countries such as France, Japan, and Spain in the original GBD study, Murray and Lopez (1996a) developed an algorithm based on the assumption that the cluster of countries comprising Canada, Finland, New Zealand, and Norway, where ill-defined coding was low, would define the standard coding practice. For all other countries, the percentage of cardiovascular deaths (excluding stroke) assigned to these codes in excess of this standard percentage was then assumed to be largely miscertified IHD. For the GBD 2001, Lozano and others (2001) developed a revised method to estimate the fraction of IHD deaths assigned to ill-defined cardiovascular codes. This involved estimating age- and sex-specific regression equations predicting observed IHD death rates in terms of the ill-defined CVD death rates and the smoking impact ratio for a cross-national data set of 372 country-years of death registration data for 26 countries between 1979 and 1998. The smoking impact ratio, estimated from lung cancer mortality rates using the Peto-Lopez method (Peto and others 1992), is a measure of the cumulative effects of tobacco exposure as a risk factor for IHD.

Table 3.4 shows the resulting correction factors, that is, the proportion of ill-defined CVD deaths reassigned to IHD. As expected, the extent of miscoding at every age, for both males and females, was systematically higher in high ill-defined coding countries, where the results suggest that 50 to 95 percent of ill-defined CVD codes should be reassigned to IHD.

With correction, the age standardized death rates increased in all countries, but most notably in Japan (26 percent for males and 24 percent for females), France (27 percent

Table 3.4 Correction Factors Giving Proportion of Ill-Defined CVD Deaths to Be Reassigned to IHD, by Age and Sex

	Males		Females	
Age group	Low ill-defined coding countries	High ill-defined coding countries	Low ill-defined coding countries	High ill-defined coding countries
35–39	0.000	0.000	0.000	0.000
40–44	0.107	0.107	0.000	0.000
45–49	0.039	0.273	0.000	0.041
50–54	0.040	0.696	0.101	0.446
55–59	0.203	0.941	0.139	0.689
60–64	0.160	0.754	0.119	0.660
65–69	0.253	0.827	0.251	0.615
70–74	0.264	0.732	0.202	0.469
75–79	0.233	0.576	0.170	0.358
80+	0.030	0.242	0.060	0.198

Source: Lozano and others 2001.

for males and 35 percent for females), and Greece (32 percent for males and 47 percent for females). Smaller increases were apparent for Belgium, the Czech Republic, Hungary, Italy, Portugal, and Spain (12 to 25 percent on average for males and females), and only small changes were observed for Austria, Germany, the Netherlands, and the United States (about 5 percent). In other countries, including Australia, Canada, Finland, Ireland, New Zealand, Norway, and the United Kingdom (Northern Ireland and Scotland), no corrections were suggested by this analysis.

Corrections for miscertification narrow the range in death rates across countries from a fivefold to a fourfold variation and also change the relative rankings of countries. The analysis of IHD miscertification is supported by the dramatic increase of more than 25 percent in recorded IHD mortality rates in Japan between 1994 and 1995 with the change from ICD-9 to ICD-10, whereby physicians were encouraged not to use heart failure as an underlying cause of death. Prior to the introduction of ICD-10, corrected rates were more than 80 percent higher in males and around 70 percent greater in females compared with what was recorded in vital statistics.

Lozano and others (2001) compare the miscertification levels estimated using their regression approach with those observed in the WHO Monitoring Cardiovascular Disease (MONICA) study sites. They find general agreement in relation to the existence of significant miscertification in each country, but less clear agreement on specific levels of miscertification. This latter finding is difficult to interpret given some difficulties in mapping the MONICA "possible IHD category" to ICD categories and the fact that the study sites may not be representative of national populations.

While the empirical results of applying the recoding model are encouraging, and the GBD 2001 has used it to reassign ill-defined CVD codes, two points are noteworthy. First, the fraction of ill-defined cardiovascular deaths that are due to IHD is assumed to be constant across countries within each of the low and high ill-defined code groups. Statistical models can only go so far in extracting truth from poorly coded deaths data, and more precise country-specific analyses really require recoding studies for samples of relevant deaths, ideally involving autopsy or other clinical diagnostic information. Second, due to the nonstandard disease classification used in Russia and other newly independent states (175 categories based on ICD-9), the method cannot be applied without further evidence from autopsies as to the true cause of cardiovascular deaths. The single most important cause of cardiovascular death in these countries is "coronary atherosclerosis" (093 in the Soviet classification of diseases), which in part reflects a disease process different than what the term implies elsewhere (Chenet and others 1998; Zatonski 1998). The use of the code "sudden death" to describe mortality often associated with binge drinking in Russia and neighboring countries may also conceal cases of IHD (Kauhanen and others 1997).

Ill-Defined Cancer Codes. In the GBD 1990 study, deaths coded to ICD-9 195–199 (malignant neoplasm of other and unspecified sites, including those whose point of origin cannot be determined, secondary and unspecified neoplasm) were redistributed pro rata across all malignant neoplasm categories within each age and sex group, so that the category "other malignant neoplasms" included only malignant neoplasms of other specified sites (Murray and Lopez 1996a).

For the GBD 2001, the survival model developed for estimating cancer deaths by site from cancer incidence data (Mathers, Shibuya, and others 2002) was used to compare predicted deaths from the survival model for the United States with those reported in U.S. vital statistics. This comparison identified four sites that did not appear to have any significant coding of cancer deaths to the garbage codes ICD-9 195–199. The redistribution algorithm for cancer garbage codes was therefore revised for the GBD 2001 to redistribute cancer garbage code deaths pro rata across all cancer sites except liver; pancreas; ovary; and trachea, bronchus, and lung.

Intent of Injuries Undetermined. Deaths assigned to codes for injuries undetermined whether accidentally or purposefully inflicted (ICD-9 codes E980–989 and ICD-10 codes Y10–Y34 and Y872) are those where the person certifying the cause of death has not determined whether the injuries were unintentional or intentional, for example, an outcome of self-inflicted injury or assault. While there will remain a residue of deaths for which insufficient information is available to determine intent, this should be a small fraction of injury deaths if appropriate forensic and coronial investigations are carried out. Excluding South Africa, the proportion of injury deaths assigned to these codes varies from less than 0.5 percent in most developed countries to just over 5 percent (table 3.3). To reduce bias in estimating deaths due to unintentional and intentional injuries, deaths coded as undetermined intent were redistributed pro rata by age and sex to the GBD categories for intentional and unintentional injury.

Data Sources and Methods for Some Specific Countries

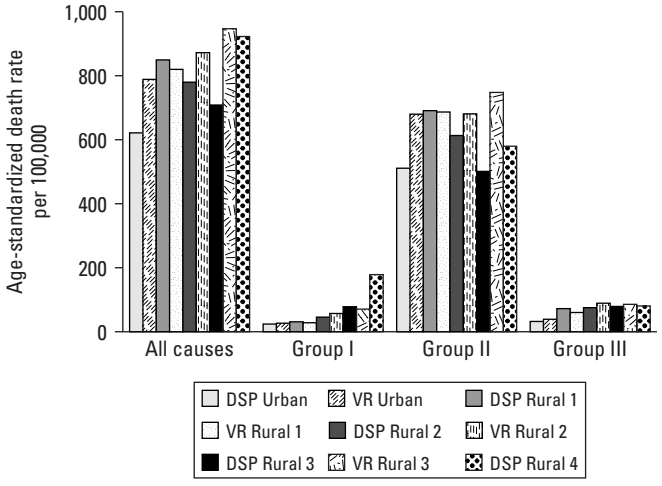
In some cases, either because of large population size, and hence implications for global mortality estimates, or because of recent national burden of disease research involving one or more of the authors, more detailed methods to estimate mortality patterns were applied, as summarized in the following subsections.

China. Cause-specific mortality data for China are available from two sources: the sample VR system administered by the Ministry of Health and the Disease Surveillance Point (DSP) system established by the Chinese Center for Disease Control (see Yang and others 2005 for an overview of the design and operational characteristics of these systems). The VR system covers a population of 120 million people at 137 sample sites and captures around 700,000 deaths per year. The DSP system has 145 surveillance points, covers a population of around 11 million, and collects information on around 50,000 deaths per year.

The Ministry of Health classifies sample sites for the DSP system into an urban stratum and four socioeconomic strata for rural areas, based on an analysis of nine indicators for rural counties from the 1990 national census. These indicators include birth and mortality rates, dependency ratios, literacy rates, and proportions of agricultural versus industrial occupations in the overall workforce. The VR system's sample sites are classified into one urban and three rural socioeconomic strata. Because the sample sites for the DSP system are considered to be nationally representative, the fraction of the national population in each socioeconomic stratum was assumed to follow the same population distribution as the DSP sites.

Data from the VR system for 2000 and a three-year average for the DSP system from 1997–9 were separately appraised for their usability in estimating national-level, cause-specific mortality for China. From the two systems, a comparison of age-standardized mortality rates for specific conditions was carried out for each socioeconomic stratum, as shown in figure 3.3.

We found that the mortality rates of the DSP system reflected the broad cause, group-specific mortality distribution more accurately, especially in rural areas. Also, the sampling distribution of sites in the DSP system was more nationally representative than that of the VR system. Thus, the proportional distribution of broad cause group mortality



Source: Authors' calculations.

Note: Mortality rates are age standardized using the WHO world standard population.

Figure 3.3 Mortality Rates for Socioeconomic Strata, by Cause Group, from China's Two Mortality Data Systems

for each stratum from the DSP data was applied to each stratum-specific mortality envelope to derive the broad cause group mortality in absolute numbers of deaths by age and sex.

The VR system's data captured mortality at the level of subgroup and specific cause more accurately, and because it was based on a significantly larger sample of deaths, it showed more plausible age patterns for specific causes. Hence, the specific cause-proportionate mortality distributions from the VR system's data were used for distributions within broad cause groups.

Finally, we summed the mortality estimates by cause, age, and sex from each stratum to obtain a national estimate of cause-specific mortality that had not been corrected for underregistration. We then inflated this cause-specific mortality to the national all-cause mortality envelope from the life table analysis to obtain the final national estimate of cause-specific mortality for 2001. We adjusted these estimates with information from WHO technical programs on maternal, perinatal, and childhood-cluster conditions and from epidemiological estimates for TB, HIV/AIDS, illicit drug dependence and problem use, rheumatoid arthritis, and war deaths.

India. For India, separate mortality recording systems for rural and urban areas were used to estimate all-cause death rates by age and sex for rural and urban areas and these were added to obtain national all-cause death rates to construct a national life table. The all-cause mortality envelope was derived from a time series analysis of age-specific death rates from the Sample Registration System after correcting them for underregistration (88 percent completeness) (Mari Bhat 2002).

Cause patterns of mortality were based on the Medical Certification of Cause of Death Database for urban areas of India and the Annual Survey of Causes of Death for rural areas of India. The all-cause mortality envelope was split into separate envelopes for urban and rural populations using a 70:30 ratio. Data on cause-specific mortality from separate sources for rural and urban areas were used with these mortality envelopes to build up independent estimates for urban and rural areas, which were summed to obtain national cause-specific mortality estimates.

For rural areas, the Andhra Pradesh burden of disease study (Mahapatra 2002) analyzed data from the Annual Survey of Causes of Death for 1996–8. The analysis included the redistribution of ill-defined deaths to specific causes based on a verbal autopsy retest survey conducted as part of the field studies for the project. For urban areas, data from the Medical Certification of Cause of Death system for 1996 were used. This system provides data on about 400,000 deaths annually coded to a national list of ICD-9 causes groups that approximates the ICD-9 Basic Tabulation List. These data were mapped onto the GBD classification and inflated to the urban mortality envelope. The proportion of urban deaths due to injuries was adjusted based on results from a large-scale verbal autopsy study in the city of Chennai, which detected that about 2.5 percent of deaths certified as due to ill-defined medical causes were actually due to injuries (Gajalakshmi and others 2002).

The summed national-level, cause-specific mortality estimates were adjusted with information from WHO technical programs on maternal, perinatal, and childhood-cluster conditions, as well as epidemiological estimates for TB, HIV/AIDS, illicit drug dependence and problem use, rheumatoid arthritis, and war deaths.

Egypt. Even though Lopez and others (2002) assessed Egyptian death registration data for 2000 to be almost complete, these data contained high proportions of deaths coded to symptoms and ill-defined conditions, as well as to conditions such as heart failure and cardiac arrest that were not underlying causes of death. Hence, a model-based prediction of the broad cause proportionate distribution by age and sex was used and applied to the cause-specific mortality structure from the country data after excluding a major proportion of the ill-defined deaths.

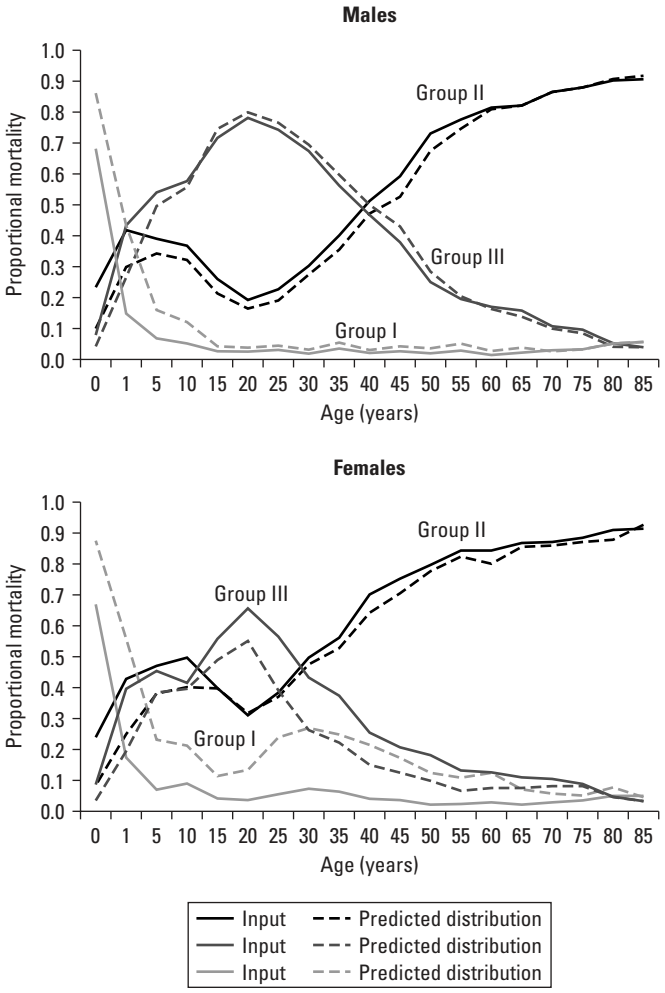
Turkey. The national life table for Turkey was estimated from separate urban and rural life tables. To estimate the urban life table, reported deaths during 1991–9 in the 81 provincial and distinct urban centers were evaluated for completeness using established demographic methods. These methods suggested that for more recent years, adult deaths were about 80 percent complete for males and 78 percent complete for females. These correction factors were used to estimate the level of adult mortality $({}_{45}q_{15})$ in 1999 and the rate was then projected forward to 2000. The resulting estimates (0.190 for males and 0.106 for females) were similar to the levels estimated from the 2002–3 nationally representative mortality survey carried out by the Ministry of Health and Başkent University (Baskent University 2005). Together with estimated child mortality values from the 1998 DHS projected to 2000, a full life table was estimated for urban Turkey, which is equivalent to about two-thirds of the national population. Death rates were projected to 2001 assuming an annual rate of mortality decline of 1.25 percent. For rural

areas, child mortality was first estimated from the DHS in the same way as for urban areas. Adult mortality ($_{45}q_{15}$) was estimated from the WHO modified logit life table system (0.235 for males, 0.189 for females), values that were broadly similar to national mortality survey data, although the relatively small number of rural deaths in the survey, about 300, gave rise to substantial uncertainty about the true levels of adult mortality in rural areas. The urban and rural death rates were then weighted by population size to obtain estimated national death rates, and hence the life table.

Data on causes of death were only available for urban areas of Turkey. These data were systematically reviewed for cause miscoding and adjusted based on clinical opinion and evidence on a sample of deaths from urban hospitals in Ismir and Ankara. In particular, most of the large proportion of deaths coded to "other heart disease" were reassigned to specific vascular pathologies based on this clinical evidence. For rural areas, causes of death were estimated using CodMod as described later. Adjusted proportions of Group I, II, and III deaths by age and sex were first estimated, and then the same proportionate distribution of deaths by cause as observed for urban areas was applied, after adjustment, to estimate the detailed pattern of causes of death.

Islamic Republic of Iran. Data from the VR system in Iran were compiled for 18 of the country's 26 provinces for 2001. The data were coded to a condensed list of 150 cause categories using ICD-10. Because the registration system only covered part of the national population, a model-based prediction was used to estimate the broad cause proportionate mortality for the whole country. The results are shown in figure 3.4. The model predicted a higher proportion of Group I causes for both males and females in childhood and a higher proportion of Group I causes for females ages 15 to 44, reflecting higher maternal mortality among the nonregistered population than among the registered population. The predicted distributions for the broad cause groups were then applied to the specific-cause proportionate mortality from the reported data and adjusted to the national mortality envelope derived from the life table analysis.

Thailand. VR data were available for 2000 with an estimated coverage of about 80 percent (Lopez and others 2002). However, the proportion of ill-defined conditions was nearly 50 percent, because many deaths in Thailand occur at home and the cause of death is often reported by lay persons. To improve the usability of data from the VR system, the Ministry of Public Health conducted a retest survey on a sample of about 33,000 deaths, using verbal autopsy methods, to ascertain the true cause of death (Ministry of Public Health 2002). This included a sample of 12,000 deaths with ill-defined causes. The study reallocated about 66 percent of deaths with ill-defined causes to specific causes, including reclassifying many deaths as caused by HIV/AIDS. The reallocation algorithm for ill-defined causes from the verbal autopsy study was used to correct the high proportion of ill-defined deaths from the VR data, and then the resultant cause-specific proportionate mortality was inflated to the national mortality envelope derived from the life table analysis.



Source: Authors' calculations.

Figure 3.4 CodMod Estimation of Major Cause Group Proportional Mortality for Islamic Republic of Iran, 2001

Epidemiological Estimates of Mortality for Specific Causes

As outlined in table 3.2, specific epidemiological estimates for some causes were also taken into account in analyzing

Table 3.5 Numbers of Data Sets Contributing to Epidemiologically Based Estimates of Deaths Due to Specific Causes

Cause	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	High-income countries	Total
Tuberculosis[a]	24	27	34	16	8	39	31	179
HIV/AIDS[a]	14	26	27	13	5	37	29	150
Diarrheal diseases		0	15	8	21	24	0	73
Childhood-cluster diseases								
Pertussis	14	33	64	14	8	45	124	302
Poliomyelitis	22	27	32	15	8	47	37	192
Diphtheria	12	25	2	14	8	46	8	115
Measles	22	18	32	12	8	47	22	127
Tetanus	48	23	27	40	32	79	34	289
Meningitis	23	18	30	12	4	27	43	157
Hepatitis B and C	40	27	47	43	18	67	113	355
Malaria	9	0	2	1	7	142	0	161
Tropical-cluster diseases								
Trypanosomiasis	0	0	0	0	0	36	0	36
Chagas' disease	0	0	31	0	0	0	0	31
Schistosomiasis	6	0	3	8	0	37	1	55
Lower respiratory infections	2	0	18	0	9	18	2	49
Maternal conditions (all causes)	6	0	9	5	4	20	1	45
Unsafe abortion	14	32	27	11	13	49	10	156
Perinatal causes	7	0	7	11	19	12	0	56
Malignant neoplasms	14	12	12	10	3	14	40	105
Drug use disorders	11	11	18	10	6	15	43	114
War	3	1	1	0	0	6	7	18
Total	296	280	438	243	181	807	545	2,765

Source: Authors' calculations.
Note: The data sources include population-based epidemiological studies, disease registers, and surveillance and notification systems. Where possible, regional and global totals refer to numbers of separate studies, or country-years of reported data from surveillance or notification systems. Refer to text for more information on data sources for specific causes.
a. Totals refer to numbers of countries for which data were available, not to total data sets or country-years.

causes of death for countries. Table 3.5 summarizes the numbers of studies (population-based epidemiological studies, disease registers, and notification systems) that contributed to the estimation of mortality due to 21 specific causes of death, including HIV/AIDS, malaria, and TB. As the table shows, more than 2,700 data sets contributed to the estimates for these 21 causes of death, with almost one-third of these relating to Sub-Saharan Africa.

Tuberculosis. In 1997, WHO began a study to develop country estimates of incidence, prevalence, and mortality from TB (for a detailed description of data sources and methods see Dye and others 1999). The study derived estimates of incidence from case notifications adjusted by estimated case detection rates, prevalence data on active disease combined with estimates of average case durations, or estimates of infection risk multiplied by a scalar factor relating the incidence of smear-positive pulmonary TB to annual risks of infection.

Since the original estimates for 1997 were completed, revised and updated estimates have been prepared. Most countries reporting to WHO have provided notification data with interpretable trends and with no other evidence for any significant change in the case detection rate. Trends in notification rates were assumed to represent trends in incidence rates for most countries except those with evidence of changes in case detection rates. China carried out a countrywide disease prevalence survey during 2000, and the results were used to reevaluate incidence for 1999. For other countries with evidence of changes in case detection rates, the trend for one of eight groups of epidemiologically similar countries was assumed to apply (Corbett and others 2003). Annual reports on TB control have included further details on surveillance methods, case notifications, and incidence estimates by country (WHO 2003a).

Deaths due to all forms of TB (excluding HIV-infected persons) were estimated for 2001. For countries with VR data, these estimates were based on the most recently

available VR data. For other countries, estimates were based on the estimated TB incidence rates (excluding HIV-infected persons) multiplied by the estimated case fatality rates and weighted for the proportion of cases treated and the proportion smear-positive.

HIV/AIDS. The Joint United Nations Programme on HIVAIDS and WHO have developed country-specific estimates of HIV/AIDS mortality and revise them periodically to account for new data and improved methods (Schwartlander and others 1999; Walker and others 2003). For the most recent round of estimates, they used two different types of models depending on the nature of the epidemic in a particular country. For generalized epidemics, in which infection is spread primarily through heterosexual contact, they used a simple epidemiological model to estimate epidemic curves based on sentinel surveillance data on HIV seroprevalence (UNAIDS Reference Group on Estimates Model and Projections 2002). For countries with epidemics concentrated in high-risk groups, they used prevalence estimates derived from the estimated population size and prevalence surveillance data in each high-risk category, and then employed simple models to back-calculate incidence and mortality based on these estimated prevalence trends (Stover and others 2002).

For countries with death registration data, HIV/AIDS mortality estimates were generally based on the most recently available VR data except where miscoding of HIV/AIDS deaths was evident. In such cases, a time series analysis of causes was carried out to identify and reassign miscoded HIV/AIDS deaths. For other countries, estimates were based on the Joint United Nations Programme on HIV/AIDS and WHO estimates of HIV/AIDS mortality for 2001, or in some cases where these were not available, on the estimated prevalence of HIV/AIDS in 2001 multiplied by the average subregional mortality to prevalence ratio.

Diarrheal Diseases. For countries with usable death registration data, deaths due to diarrheal diseases were estimated directly from that data. For other countries, a regression model was used to estimate proportional mortality from diarrhea for children under five (Boschi-Pinto and others forthcoming). The regression model included the logit of the proportional mortality from diarrheal diseases in children from birth through four as a dependent variable and gross domestic product (GDP) per capita in international dollars, time, and region indicator variables as explanatory variables. The regression data were drawn from more than 60 community-based studies carried out since 1980 with study durations of multiples of 12 months. This model was validated and supplemented with vital statistics from developing countries where coverage was high.

Vaccine-Preventable Childhood Diseases. Mortality for measles was estimated using two approaches. In countries where routine vaccine coverage was low (less than 80 percent), incidence data were derived from a natural history model using country-specific vaccine coverage and attack rates from population-based studies (Crowcroft and others 2003). For countries with higher routine coverage and in the elimination phase, case notification and country-specific correction factors were used to estimate incidence. To obtain mortality in countries where VR data were not available, age- and region-specific case fatality rates from community-based and outbreak studies were applied to incidence estimates derived from both approaches.

Pertussis cases and deaths were based on a natural history model using vaccine coverage and age-specific case fatality rates from community based studies, where available (Crowcroft and others 2003). The model is a revision of Galezka and Robertson's (2004) approach.

The incidence estimates for polio and diphtheria (Stein 2002b; Stein and Robertson 2002) were based on country-specific reported cases of acute flaccid paralysis with adjustments for underreporting and on country-specific notifications of diphtheria cases with an assumed notification efficiency of 20 percent, respectively. A case fatality rate of 10 percent was assumed for diphtheria in countries without high death registration coverage.

Acute Respiratory Infections. Community-based studies with durations of one year or longer, published since 1980, were used to estimate the proportional mortality from acute respiratory infections in children under five in developing countries (Williams and others 2002). The results confirmed earlier findings that the proportion of deaths attributable to acute respiratory infections diminishes as general mortality diminishes. Much of the variability across studies in the proportion of child deaths attributed to acute respiratory infections was due to the use of verbal autopsies to determine the cause of death. Data from seven studies that compared verbal autopsies with hospital-based diagnoses indicated that the percentage of deaths due to acute respiratory infections could be underestimated by up to 4 percent. The modeled estimates were supplemented with vital statistics from developing countries where coverage was high to develop regional and global estimates.

Malaria. Malaria mortality estimates for all regions except Sub-Saharan Africa were derived from the cause of death data sources described earlier. For Sub-Saharan Africa, country-specific estimates of malaria mortality were based on analyses by Snow and others (1999) and updated using the most recent geographical distributions of risks from the Mapping Malaria Risks in Africa International Collaboration. Subsequent adjustments were made to the estimated country-specific malaria deaths to ensure that total mortality for Group I causes, particularly in the 0–4 year age group, and including estimates for other specific causes such as TB, HIV/AIDS, and measles, added to the total all-cause mortality envelopes for the relevant countries. Work is currently under way to refine and revise these country-specific estimates of malaria mortality in collaboration with other WHO programs and external expert groups (Korenromp and others 2003; Rowe and others 2004).

Chagas' Disease. Chagas' disease estimates were obtained from recent intensive surveillance activities in the Southern Cone American countries and community-based studies (Moncayo 2003; Moncayo, Guhl, and Stein 2002). These estimates were supplemented with and validated against vital statistics from Latin American countries where coverage was high.

Maternal Mortality. Mortality from maternal conditions was estimated following a similar approach to earlier analyses (Abdallah and Zehani 2000; Hill, AbouZahr, and Wardlaw 2001), using the most recently available mortality data for developing countries, together with improved estimates of the impact of HIV/AIDS as a competing cause of mortality (WHO, UNICEF, and UNFPA 2003). Depending on the availability and quality of data on detailed causes of maternal deaths, the methods used to estimate the proportion of deaths of women of reproductive age that is due to maternal causes (PMDF) varied and included vital records, DHSs and other surveys, Reproductive Age Mortality Study surveys, and epidemiological models. For countries without death registration data, both nationally reported data and specific criteria for a regression model were used to estimate maternal mortality. The dependent variable in this model was the logit of the PMDF after subtracting HIV/AIDS deaths and the explanatory variables were the proportion of deliveries with skilled birth attendance, the GDP per capita in international dollars, and the general fertility rate plus region dummy variables. The total number of deaths from maternal causes for each country was estimated by multiplying the PMDF by the overall mortality envelope for women aged 15 to 49 after subtracting HIV/AIDS deaths.

Abortion-related mortality occurs mainly as a result of unsafe induced abortion. It has been estimated using published and unpublished reports for 131 countries together with other information on legal and social contexts and summed to give regional totals (WHO 2004a).

Perinatal Causes. The cause category "perinatal causes" refers to the ICD cause group "conditions arising in the perinatal period" (ICD chapter 16, P-codes). Deaths from these causes, primarily low birthweight, prematurity, and birth trauma or asphyxia, may occur at any age, and can include some maternal or placental causes, such as multiple pregnancy. Deaths from these causes should not be confused with deaths that occur during the perinatal period, which include stillbirths and neonatal deaths from other causes such as tetanus and congenital malformations. However, acknowledging that nearly all deaths due to perinatal causes occur during the neonatal period, we first estimated the envelope of neonatal mortality for every country (for details of the method see Murray and Lopez 1998). The analysis has been updated using recent death registration data and DHS data. Work is currently under way in collaboration with other WHO programs and external expert groups to refine and revise these country-specific estimates of mortality due to perinatal causes (Lawn, Cousens, and Zupan 2005).

Cancer. For countries without good VR data to estimate the site-specific distribution of cancer mortality, a site-specific model for relative interval survival was developed and applied to cancer incidence estimates by site (Mathers, Shibuya, and others 2002; Shibuya and others 2002). This age-period-cohort model of cancer survival was based on data from the Surveillance, Epidemiology, and End Results program of the National Cancer Institute (Ries and others 2002). The model was further adjusted by site for each country based on observed correlations in regional and country survival probabilities and level of economic development (GDP per capita in international dollars) (Mathers, Shibuya, and others 2002). Combined with available incidence data from the International Agency for Research on Cancer (Ferlay and others 2001), cancer death distributions were estimated and the model estimates were validated against available VR data from countries other than the United States.

Drug Use Disorders. This category includes dependence on and nondependent problem use of both licit and illicit

drugs, excluding tobacco and alcohol (see table 3A.2). Estimating mortality directly attributable to drug use disorders, such as death from overdose, is difficult because of variations in the quality and quantity of mortality data. For some regions with a substantial prevalence of illicit drug use, available data sources do not record any deaths as due to drug dependence. As a result, it is necessary to make indirect estimates based on estimates of the prevalence of illicit drug use and of case fatality rates, on the assumption that almost all mortality directly attributable to drug use disorders is associated with illicit drugs. However, making even indirect estimates is difficult because the use of these drugs is illegal, stigmatized, and hidden.

The comparative risk assessment work carried out for the *World Health Report 2002* (WHO 2002d) included estimating the prevalence of illicit drug dependence and direct mortality based on available data (Degenhardt and others 2003; Ezzati and others 2002). Data on the prevalence of problematic illicit drug use were derived from a range of sources, including a formal literature search of all studies that estimated the prevalence of problematic drug use, the United Nations Drug Control Program, and the European Monitoring Centre for Drugs and Drug Addiction (2002).

A search was also conducted for cohort studies of drug users that had estimated mortality due to individual causes of death (overdose, suicide, and trauma) and to all causes of death (updating previous systematic reviews). Data on the number of years of follow up were extracted from each study and a weighted average annual mortality rate was calculated for each cause of death and for their sum.

The total regional deaths due directly to illicit drug use were then distributed among countries in each region in proportion to estimated prevalences of drug dependence and problem use. For developed countries with good VR data, evidence suggests that deaths due to drug use disorders are underrecorded (European Monitoring Centre for Drugs and Drug Addiction 2002; Single and others 2002). For these countries, mortality figures were adjusted for age groups in which the estimated deaths derived from the comparative risk assessment analysis exceeded the number of deaths recorded on the assumption that these additional deaths were originally miscoded as due to accidental poisoning or ill-defined causes.

War Deaths. Country-specific estimates of war deaths and corresponding uncertainty ranges were obtained from a variety of published and unpublished databases. The *Armed Conflict Report* (Project Ploughshares 2001, 2002), a report that supplies several databases with mortality estimates (see, for example, Center for Research on the Epidemiology of Disasters 2001), was the primary source used for time trend and mortality estimates. This report was a preferred source of information, because it includes war deaths by country and year, a departure from the typical practice of supplying estimates by conflict and across years. The report's data were checked against historical and current estimates by other research groups, such as those of the Uppsala Conflict Data Project (Gleditsch and others 2002) and the Center for International Development and Conflict Management at the University of Maryland (Marshall and Gurr 2003).

These data sets rely on press reports of eyewitness accounts and official announcements of combatants, which are, unfortunately, the main and often only possible method of estimating casualties in armed conflicts. Murray, King, and others (2002) summarize the issues involved in estimating war deaths and emphasize the considerable uncertainty in the GBD 2000 and GBD 2001 estimates. Many of the available data sources on conflict deaths only count deaths in conflicts that involve the armed forces of at least one state or one or more armed factions seeking to gain control of all or part of the state, and in which more than a certain number of people have been killed, for instance, more than 1,000 total or more than 25 per year. Some sources count only battlefield deaths and deaths that occur concurrently with conflict.

In contrast, the GBD 2001 estimated deaths occurring in 2001 in which the underlying cause (following ICD conventions) was an injury due to operations of war or civil insurrection, whether or not that injury occurred during the time of war or following the cessation of hostilities, which in some cases occurred many years earlier than 2001. The GBD 2001 estimates included injury deaths resulting from all civil insurrection, whether or not the state was involved. They also included deaths due to terrorism carried out by organized groups. The GBD 2001 estimates of war deaths did not include deaths from other causes, such as starvation, infectious disease epidemics, or lack of medical intervention for chronic diseases, that may be counterfactually attributable to war or civil conflict.

Deaths due to landmines and unexploded ordnance were estimated separately by country. The primary sources for these data were the *Landmine Monitor Report* of the International Campaign to Ban Landmines (Human Rights Watch 2001) and Handicap International's annual report on landmine victims (Handicap International 2001).

Whereas total injury deaths for most countries were derived either from death registration data or from cause of

death models, war deaths were treated as "outside the envelope," and for countries for which life tables were estimated from data for earlier years not affected by war, war deaths were added to the total deaths estimated from the life tables.

Cause of Death Modeling for Countries with Poor Data

Although epidemiological studies and other data sources described in the previous section allow the estimation of deaths due to certain causes in populations without death registration data, they do not cover many important causes of death in these populations, such as CVD or injuries. To address these information gaps, models for estimating broad cause of death patterns can serve as the starting point for indirect methods of estimating attributable mortality for a comprehensive list of causes.

Preston (1976) was the first to develop indirect methods for estimating cause of death structure. Preston modeled the relationship between total mortality and cause-specific mortality for 12 broad groups of causes using historical VR data for the industrial countries and a few developing countries. In particular, Preston postulated that cause-specific mortality was a linear function of total mortality. The GBD 1990 study (Murray and Lopez 1996a) used cause of death models to estimate mortality for the three major cause groups (Groups I, II, III) as a function of mortality from all causes, based on regression analysis of observations on recent mortality patterns from 67 countries. The log of cause-specific mortality was postulated to be a linear function of the log of total mortality, and poorly coded deaths were redistributed before estimating the regression equations.

The cause of death model used in the GBD 1990 has been substantially revised and enhanced for estimating deaths by broad cause group in regions with limited information on mortality. The statistical model has been improved by adapting models for compositional data that were previously developed in other areas, and a substantially larger data set of 1,613 country-years of observations was used for analysis. Income per capita has been added to the model as an explanatory variable in addition to the level of all-cause mortality (Salomon and Murray 2002a).

This section provides an overview of the new model, CodMod, developed by Salomon and Murray for the GBD 2001, and describes its application for estimating (a) broad cause patterns for populations where no cause of death information is available, and (b) broad cause of death patterns when incomplete death registration data are available. The estimation of broad cause of death patterns is critical to avoid overemphasizing or underemphasizing specific causes due to biases in the data sets available to estimate national mortality patterns, for example, if data are derived from urban hospital statistics.

Statistical Methods and Data. The statistical basis for cause of death models has also been enhanced by the adaptation of models for compositional data that were previously developed in other areas (Katz and King 1999). These models take account of the key features of this type of data, namely, that the fraction of deaths attributable to each cause is bounded by 0 and 1 and that all the fractions must sum to unity. Violations of both constraints were possible with the regression models used in the GBD 1990; an additional normalization step was undertaken to impose these constraints. The new model explicitly ensures both these constraints using a seemingly unrelated regression model (for a full description of this model and its application to analysis of the epidemiological transition, see Salomon and Murray 2002a).

In addition to revising the statistical model used in the previous study, Salomon and Murray also considered additional covariates beyond all-cause mortality. The objective was to identify variables likely to have a strong relationship to cause-specific mortality, but also variables for which estimates would be available in all countries, because one of the goals of the exercise was to use the model to predict broad patterns of mortality for countries without VR data. The variables that were selected based on these criteria were all-cause mortality, as before, plus income per capita in international dollars. Both variables were included in logged form, because this formulation tended to provide a better fit than the linear form.

Perhaps most important, the new cause of death model incorporated a more extensive database on mortality by age, sex, and cause than previous efforts, with substantially more representation of middle-income countries. Increasing the range of observed cause of death patterns should improve the validity of extrapolations from countries with registration systems to data-poor settings.

Separate models were estimated for each sex and the following age groups: younger than 1 month, 1–11 months, 1–4 years, 5–9 years, 10–14 years, and so on by five-year age groups up to 80–84 years and 85 years and older. For the two youngest age groups, a smaller number of observations were available because some countries for some periods reported only on the age range from birth to 11 months. A total of 586 country-years of observations were available for the first two age groups and 1,613 country-years of observations for each of the other 18 age groups. The regression

results provided insights into the relationships between cause of death patterns, all-cause mortality levels, and increases in income per capita (Salomon and Murray 2002a).

Salomon and Murray also used Monte Carlo simulation techniques to estimate the probability distributions of the predicted cause of death components given a particular set of values for all-cause mortality and GDP per capita (Salomon and Murray 2001a). The results from this approach were useful in estimating cause of death patterns for residual areas in countries where VR covers only part of the population and in defining regional cause of death patterns.

Application of CodMod for Countries without Good Registration Data. As with the GBD 1990, one of the useful applications of cause of death models is to examine patterns of deviation from the expected cause composition across countries or regions based on the probability distribution for a predicted cause of death pattern. In other words, the models permit comparison of the observed pattern with the pattern that would be predicted conditional on the levels of all-cause mortality and income per capita associated with that observation.

Given some assumptions about the stability of this pattern of deviation over short time intervals within a country or across countries in the same mortality stratum, it is possible to use the observed cause of death pattern in a reference population to estimate the cause of death pattern for some other population while taking into account differences in the explanatory variables. Some examples of applications would be

- estimating the cause of death pattern in nonregistration areas for a country in which part of the population is covered by a VR system,
- forecasting the cause of death pattern for a country where the most recent VR data are for several years in the past, and
- estimating the cause of death pattern for a country for which information is not available but is available for other countries in the same region.

All these applications are based on the assumption that patterns of deviation from the cause compositions predicted by the model will have some stability across time and place, for example, if young adults in Canada tend to have a low proportion of Group I deaths and a high proportion of Group II deaths in one year given the levels of all-cause mortality and income in that year, a reasonable assumption would be that the next year's composition will be similarly low in Group I and high in Group II given that year's total income and mortality. This hypothesis builds on the notion that all-cause mortality and income per capita explain only some of the variation in cause of death patterns, while the other sources of this variation are unmeasured but are assumed to be relatively stable. In other words, the cause of death pattern in Canada differs from what we would predict based only on total mortality and income because other factors influence the pattern. We assume that these other factors will change gradually over time, which would imply that the deviation from the prediction should also move gradually.

Using similar arguments, Salomon and Murray (2001a) suggested that it may be possible to use patterns of deviation from one country to predict cause of death patterns in another country in the same demographic region. They demonstrated an example of this for mortality data from Chile and Mexico for women aged 35 to 39 for 1965–94. They estimated the percentiles at which the observed cause fractions for the two countries fell in the probability distribution of predicted fractions produced by the Monte Carlo simulations conditional on the mortality and income levels in those years for each country and found similarities in the deviation patterns. Overall, this example suggested that deviation patterns in groups of similar countries may be similar, allowing predictions of cause of death patterns in countries where registration data are not available but for which neighboring countries do have data.

The application of this method has been formalized in a simple spreadsheet program called CodMod (Salomon and Murray 2001a). The program incorporates the regression models described earlier and uses Monte Carlo simulation methods to generate probability distributions around predicted cause of death patterns conditional on values for all-cause mortality and income per capita. CodMod allows two main operations: (a) analysis of deviations in observed cause of death patterns given levels of mortality and income, and (b) predictions of cause of death patterns conditional on a reference pattern of deviation and levels of mortality and income.

Thus, for example, if the VR system covers only one region in a country, CodMod may be used to examine the pattern of deviation in that region from the predicted cause of death pattern at local income and total mortality levels. We assume that a similar pattern of deviation will hold in the nonregistration areas of the country, then we can use information on total mortality levels and income in the nonregistration areas to predict cause of death patterns in these areas. The GBD 2001 used CodMod for countries with incomplete death registration data to adjust for biases in

cause composition. Annex table 3A.3 lists countries for which such adjustments were carried out.

CodMod was also used to develop regional patterns of deviation from predicted cause compositions, which were then used to estimate mortality by broad causes for countries for which no registration data were available. Annex table 3A.3 summarizes details of these regional models. In the case of the Sub-Saharan Africa region, where good VR data were available for only three countries, a regional pattern of specific causes of deaths was based on VR data from urban and rural South Africa. For the Middle East and North Africa, a similar pattern was built for the Gulf states based on the four latest years of data from Bahrain and Kuwait. For other countries in that region, regional models were based on weighted death rates using Egyptian and Iranian VR data. The weights used were determined by the income levels of the individual countries and overall death rates. For the Pacific islands, a regional pattern was based on data available from islands reporting death registration data.

Whereas the original GBD study used a more detailed cause of death model for 12 causes of death to estimate deaths below the broad group level for countries without death registration data, the increased availability of death registration data in most regions has enabled us to use detailed proportional cause distributions within Groups I, II, and III based on death registration data from within each region (see annex table 3A.3 for more details). Specific causes were further adjusted on the basis of epidemiological evidence from registries, verbal autopsy studies, disease surveillance systems, and analyses from WHO technical programs as described earlier.

GLOBAL AND REGIONAL MORTALITY IN 2001

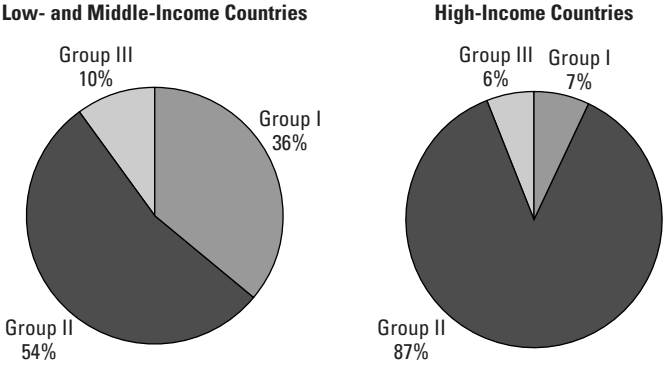
Slightly more than 56 million people died in 2001, 10.5 million, or nearly 20 percent, of whom were children younger than five. Of these child deaths, 99 percent occurred in low- and middle-income countries. Those age 70 and over accounted for 70 percent of deaths in high-income countries, compared with 30 percent in other countries. Thus, a key point is the comparatively large number of deaths among the young and the middle-aged in low- and middle-income countries. In these countries, 30 percent of all deaths occur at ages 15 to 59, compared with 15 percent in high-income countries. The causes of death at these ages, as well as in childhood, are thus important in assessing public health priorities.

This section provides an overview of global and regional causes of death in 2001. Note that as described earlier, the results reported here are tabulated by underlying disease cause or external cause of injury. Total attributable deaths for some diseases that increase the risk of other diseases or injuries will be substantially larger than the estimates of direct deaths given here. Chapter 4 estimates deaths attributable to 26 global risk factors. The tables in annex 3B provide detailed tabulations of deaths by cause and sex for regions, for low- and middle-income countries, for high-income countries, and for the world.

Distribution of Deaths by Major Cause Group

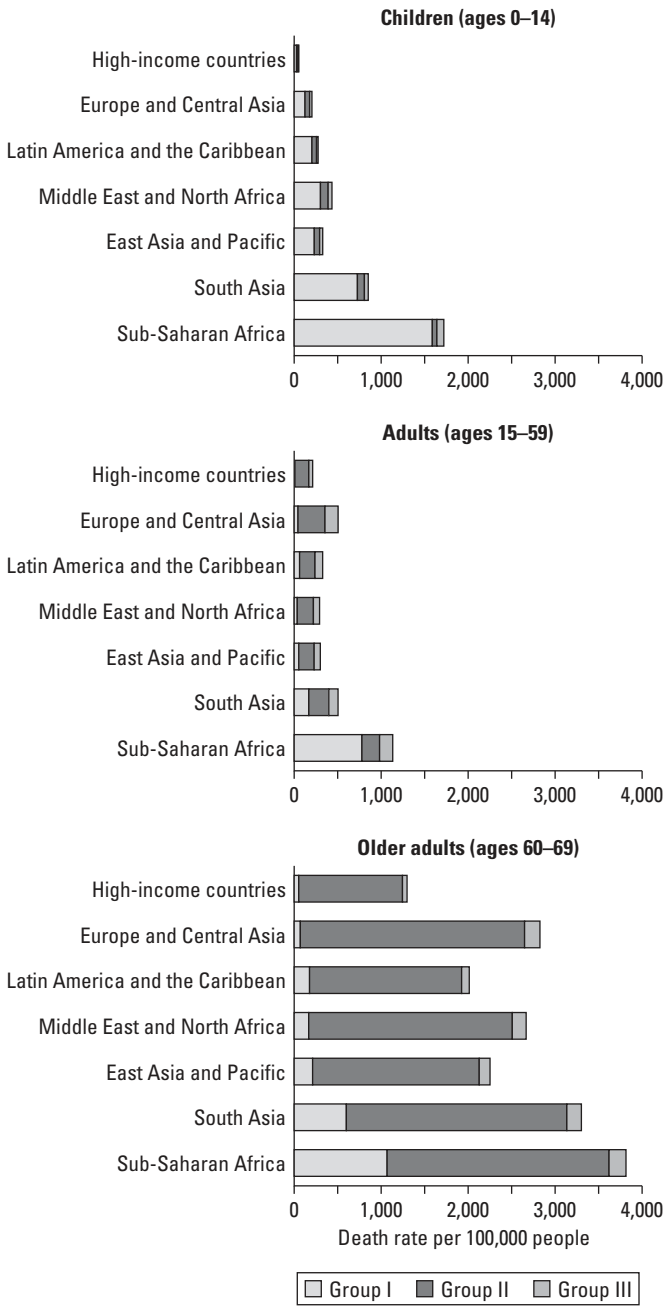
Worldwide, one death in every three is from a Group I cause. This proportion remains almost unchanged from 1990 with one big difference: whereas HIV/AIDS accounted for only 2 percent of Group I deaths in 1990, it accounted for 44 percent of Group I deaths in 2001. Excluding HIV/AIDS, Group I deaths fell from 33 percent of total deaths in 1990 to less than 20 percent in 2001. Virtually all the Group I deaths are in low- and middle-income countries. Just under 10 percent are from Group III causes (injuries) and almost 60 percent of deaths are from Group II causes (noncommunicable diseases). Figure 3.5 shows the proportional distribution of these major cause groups for low- and middle-income countries and high-income countries.

Group I causes remain the leading cause of child deaths in all regions, although they are now responsible for fewer child deaths than Group II and Group III combined in high-income countries (figure 3.6). In contrast, Group II causes are now responsible for more than 50 percent of deaths in adults ages 15 to 59 in all regions except South Asia and



Source: Authors' calculations.

Figure 3.5 Proportional Distribution of Total Deaths by Broad Cause Group, 2001



Source: Authors' calculations.

Figure 3.6 Death Rates by Broad Cause Group, Region, and Broad Age Group, 2001

Sub-Saharan Africa, where Group I causes, including HIV/AIDS, remain responsible for 33 and 67 percent of deaths, respectively. For adults ages 15 to 59, death rates from Group II causes are higher for all low- and middle-income regions than for high-income countries, and in Europe and Central Asia are almost double the rate for the high-income countries. These results show that premature mortality from noncommunicable diseases is higher in populations with high mortality and low incomes than in the high-income countries.

Leading Causes of Death

Table 3.6 shows the top 10 disease and injury causes of death in 2001 for low- and middle-income countries and for high-income countries. IHD and cerebrovascular disease (stroke) were the leading causes of death in both groups of countries in 2001, responsible for 12 million deaths globally, or almost one-quarter of the global total. Only 1.4 million of the 7.1 million who died of IHD were in the high-income countries. Stroke killed 5.4 million, of whom less than 1.0 million were in high-income countries.

Whereas lung cancer, predominantly due to tobacco smoking, remains the third leading cause of death in high-income countries, reflecting high levels of smoking in previous years, the increasing prevalence of smoking in low- and middle-income countries has not yet driven lung cancer into the top 10 causes of death for these countries. HIV/AIDS is the fourth leading cause of death in low- and middle-income countries, and HIV/AIDS death rates are projected to continue to rise, albeit at a slower pace, despite recent increased efforts to improve access to antiretroviral drugs.

Lower respiratory infections, conditions arising during the perinatal period, and diarrheal diseases remain among the top 10 causes of death in low- and middle-income countries. In 2001, these three causes of death together accounted for nearly 60 percent of child deaths globally.

Table 3.7 shows the 10 leading causes of death in low- and middle-income countries by sex in 2001. Leading causes of death are generally similar for males and females, although road traffic accidents appear in the top 10 only for males and diabetes appears only for females.

Leading Causes of Death in Children. Infectious and parasitic diseases remain the major killers of children in the developing world. Although notable success has been achieved in certain areas, for example, polio, communicable diseases still account for 7 out of the top 10 causes and are responsible for about 60 percent of all child deaths. Overall, the 10 leading causes in low- and middle-income countries represent 80 percent of all child deaths in those countries, and also worldwide (table 3.8).

Many Latin American and some Asian and Middle Eastern countries have shifted somewhat toward the cause of death pattern observed in developed countries. In these countries, conditions arising during the perinatal period, including birth asphyxia, birth trauma, and low birthweight,

Table 3.6 The 10 Leading Causes of Death, by Broad Income Group, 2001

Low- and middle-income countries			High-income countries		
Cause	Deaths (millions)	Percentage of total deaths	Cause	Deaths (millions)	Percentage of total deaths
1 Ischemic heart disease	5.70	11.8	1 Ischemic heart disease	1.36	17.3
2 Cerebrovascular disease	4.61	9.5	2 Cerebrovascular disease	0.78	9.9
3 Lower respiratory infections	3.41	7.0	3 Trachea, bronchus, and lung cancers	0.46	5.8
4 HIV/AIDS	2.55	5.3	4 Lower respiratory infections	0.34	4.4
5 Perinatal conditions	2.49	5.1	5 Chronic obstructive pulmonary disease	0.30	3.8
6 Chronic obstructive pulmonary disease	2.38	4.9	6 Colon and rectal cancers	0.26	3.3
7 Diarrheal diseases	1.78	3.7	7 Alzheimer's and other dementias	0.21	2.6
8 Tuberculosis	1.59	3.3	8 Diabetes mellitus	0.20	2.6
9 Malaria	1.21	2.5	9 Breast cancer	0.16	2.0
10 Road traffic accidents	1.07	2.2	10 Stomach cancer	0.15	1.9

Source: Authors' calculations.

Table 3.7 The 10 Leading Causes of Death, by Sex, in Low- and Middle-Income Countries, 2001

Males			Females		
Cause	Deaths (millions)	Percentage of total deaths	Cause	Deaths (millions)	Percentage of total deaths
1 Ischemic heart disease	3.01	11.8	1 Ischemic heart disease	2.69	11.8
2 Cerebrovascular disease	2.17	8.5	2 Cerebrovascular disease	2.44	10.7
3 Lower respiratory infections	1.72	6.7	3 Lower respiratory infections	1.68	7.4
4 Perinatal conditions	1.38	5.4	4 HIV/AIDS	1.18	5.2
5 HIV/AIDS	1.38	5.4	5 Chronic obstructive pulmonary disease	1.17	5.1
6 Chronic obstructive pulmonary disease	1.21	4.7	6 Perinatal conditions	1.11	4.9
7 Tuberculosis	1.04	4.1	7 Diarrheal diseases	0.85	3.7
8 Diarrheal diseases	0.93	3.6	8 Malaria	0.63	2.8
9 Road traffic accidents	0.78	3.1	9 Tuberculosis	0.55	2.4
10 Malaria	0.58	2.3	10 Diabetes mellitus	0.42	1.8

Source: Authors' calculations.

Table 3.8 The 10 Leading Causes of Death in Children Ages 0–14, by Broad Income Group, 2001

Low- and middle-income countries			High-income countries		
Cause	Deaths (millions)	Percentage of total deaths	Cause	Deaths (millions)	Percentage of total deaths
1 Perinatal conditions	2.49	20.7	1 Perinatal conditions	0.03	33.9
2 Lower respiratory infections	2.04	17.0	2 Congenital anomalies	0.02	20.0
3 Diarrheal diseases	1.61	13.4	3 Road traffic accidents	0.01	5.9
4 Malaria	1.10	9.2	4 Lower respiratory infections	0.00	2.5
5 Measles	0.74	6.2	5 Endocrine disorders	0.00	2.4
6 HIV/AIDS	0.44	3.7	6 Drownings	0.00	2.4
7 Congenital anomalies	0.44	3.7	7 Leukemia	0.00	1.9
8 Whooping cough	0.30	2.5	8 Violence	0.00	1.8
9 Tetanus	0.22	1.9	9 Fires	0.00	1.2
10 Road traffic accidents	0.18	1.5	10 Meningitis	0.00	1.2

Source: Authors' calculations.

have replaced infectious diseases as the leading cause of death and are now responsible for 21 to 34 percent of deaths. Such a shift in the cause of death pattern has not occurred in Sub-Saharan Africa, where perinatal conditions rank in fourth place and malaria, lower respiratory infections, and diarrheal diseases continue to be the leading causes of death in children, accounting for 53 percent of all deaths.

About 90 percent of all HIV/AIDS and malaria deaths in children in developing countries occur in Sub-Saharan Africa, which accounts for 23 percent of the world's births and 42 percent of the world's child deaths. The immense surge of HIV/AIDS mortality in children in recent years means that HIV/AIDS is now responsible for 332,000 child deaths annually in Sub-Saharan Africa and nearly 8 percent of all child deaths in the region.

Some progress has been made against diarrheal diseases and measles in low- and middle-income countries. While the incidence of diarrheal diseases is thought to have remained stable, mortality from diarrheal diseases has fallen from 2.5 million deaths in 1990 to about 1.6 million deaths in 2001, and now accounts for 13 percent of all deaths of children under age 15. Deaths from measles have declined modestly, although more than half a million children under five still died from this disease in 2001. Malaria causes more than a million child deaths per year or nearly 11 percent of all deaths of children under five.

Leading Causes of Death in Adults

Table 3.9 shows the leading causes of deaths among adults ages 15 to 59 worldwide in 2001. Despite a global trend of declining communicable disease burden in adults, HIV/AIDS has become the leading cause of mortality and the single most important contributor to the burden of disease among adults in this age group.

Nearly 80 percent of the 2.1 million adult deaths from HIV/AIDS in 2001 occurred in Sub-Saharan Africa. In this region, HIV/AIDS is the leading cause of death, resulting in more than 6,000 deaths every day and accounting for almost one in five deaths for all ages and one in two deaths of adults ages 15 to 59. HIV/AIDS has reversed mortality trends among adults in the region, and in many countries, life expectancies have declined since 1990.

The 4.5 million adult injury deaths in 2001 were heavily concentrated among young adults, particularly men. In the 15 to 59 age group, road traffic accidents and suicide were among the 10 leading causes of death in high-income and low- and middle-income countries, and violence (homicide) was also among the 10 leading causes in low- and middle-income countries. Among adults ages 15 to 44 worldwide, road traffic accidents were the leading cause of death for men after HIV/AIDS, followed by TB and violence. Suicide was the third leading cause of death for women in this age group, after HIV/AIDS and TB, with road traffic accidents in fifth place.

The risk of death rises rapidly with age among adults age 60 and over in all regions. Globally, 60-year-olds have a 55 percent chance of dying before their 70th birthday. Regional variations in the risk of death are smaller at older ages than at younger ages, ranging from around 40 percent in the developed countries of Western Europe to 60 percent in most developing regions and 70 percent in Sub-Saharan Africa. Historical data from countries such as Australia and Sweden show that life expectancy at age 60 changed slowly during the first six to seven decades of the 20th century, but started to increase substantially since around 1970. Life

Table 3.9 The 10 Leading Causes of Death in Adults Ages 15–59, by Broad Income Group, 2001

Low- and middle-income countries			High-income countries		
	Cause	Deaths (millions)	Percentage of total deaths	Cause	Deaths (millions)	Percentage of total deaths
1	HIV/AIDS	2.05	14.1	Ischemic heart disease	0.13	10.8
2	Ischemic heart disease	1.18	8.1	Self-inflicted injuries	0.09	7.2
3	Tuberculosis	1.03	7.1	Road traffic accidents	0.08	6.9
4	Road traffic accidents	0.73	5.0	Trachea, bronchus, and lung cancers	0.08	6.8
5	Cerebrovascular disease	0.71	4.9	Cerebrovascular disease	0.05	4.4
6	Self-inflicted injuries	0.58	4.0	Cirrhosis of the liver	0.05	4.4
7	Violence	0.45	3.1	Breast cancer	0.05	4.0
8	Lower respiratory infections	0.33	2.3	Colon and rectal cancers	0.04	3.1
9	Cirrhosis of the liver	0.32	2.2	Diabetes mellitus	0.03	2.1
10	Chronic obstructive pulmonary disease	0.32	2.2	Stomach cancer	0.02	2.0

Source: Authors' calculations.

Table 3.10 The 10 Leading Causes of Death in Low- and Middle-Income Countries, by Region, 2001

	East Asia and Pacific	Percentage of total deaths		Europe and Central Asia	Percentage of total deaths
1	Cerebrovascular disease	14.6	1	Ischemic heart disease	29.7
2	Chronic obstructive pulmonary disease	10.8	2	Cerebrovascular disease	18.2
3	Ischemic heart disease	8.8	3	Trachea, bronchus, and lung cancers	2.9
4	Lower respiratory infections	4.2	4	Chronic obstructive pulmonary disease	2.3
5	Tuberculosis	4.1	5	Self-inflicted injuries	2.1
6	Perinatal conditions	3.8	6	Hypertensive heart disease	1.9
7	Stomach cancer	3.4	7	Poisonings	1.9
8	Trachea, bronchus, and lung cancers	3.0	8	Lower respiratory infections	1.8
9	Liver cancer	2.9	9	Cirrhosis of the liver	1.8
10	Road traffic accidents	2.8	10	Stomach cancer	1.8

	Latin America and the Caribbean	Percentage of total deaths		Middle East and North Africa	Percentage of total deaths
1	Ischemic heart disease	10.9	1	Ischemic heart disease	16.9
2	Cerebrovascular disease	8.2	2	Cerebrovascular disease	6.8
3	Perinatal conditions	5.0	3	Lower respiratory infections	5.6
4	Diabetes mellitus	5.0	4	Perinatal conditions	5.5
5	Lower respiratory infections	4.8	5	Road traffic accidents	5.1
6	Violence	4.0	6	Hypertensive heart disease	3.9
7	Chronic obstructive pulmonary disease	3.0	7	Diarrheal diseases	3.9
8	Road traffic accidents	2.7	8	Congenital anomalies	2.4
9	Hypertensive heart disease	2.7	9	Nephritis and nephrosis	2.2
10	HIV/AIDS	2.5	10	Chronic obstructive pulmonary disease	2.1

	South Asia	Percentage of total deaths		Sub-Saharan Africa	Percentage of total deaths
1	Ischemic heart disease	13.6	1	HIV/AIDS	19.0
2	Lower respiratory infections	10.4	2	Malaria	10.1
3	Perinatal conditions	8.0	3	Lower respiratory infections	10.0
4	Cerebrovascular disease	6.8	4	Diarrheal diseases	6.6
5	Diarrheal diseases	5.1	5	Perinatal conditions	5.3
6	Tuberculosis	4.5	6	Measles	4.1
7	Chronic obstructive pulmonary disease	4.3	7	Cerebrovascular disease	3.3
8	HIV/AIDS	2.0	8	Ischemic heart disease	3.2
9	Road traffic accidents	1.8	9	Tuberculosis	2.9
10	Self-inflicted injuries	1.7	10	Road traffic accidents	1.8

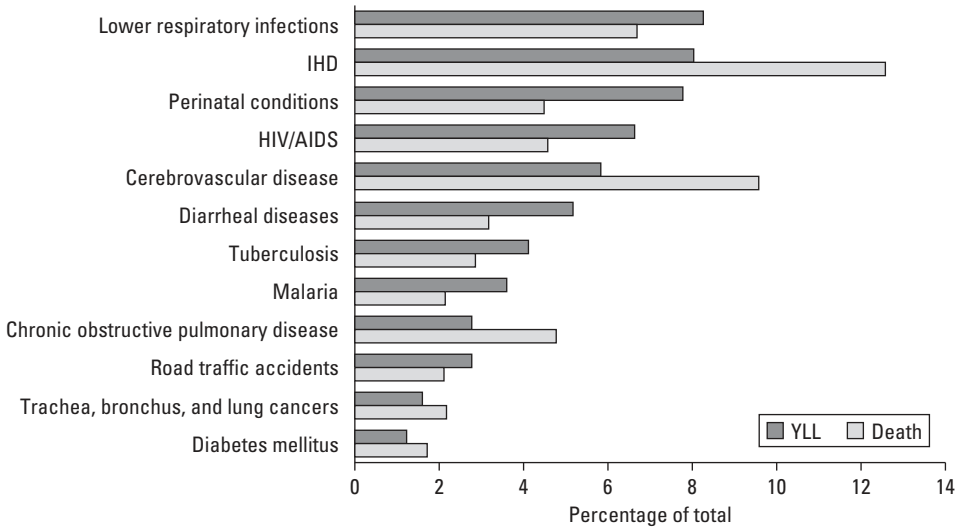
Source: Authors' calculations.

expectancy at age 60 has now reached 25 years in Japan. In Eastern Europe from 1990 onward, Hungary and Poland started to experience similar improvements in mortality for older people, but Russia has not, and is actually experiencing a worsening trend.

Regional Variations in Causes of Death

The tables in annex 3B show total deaths by age, sex, and cause for each of the regions and the world. The 10 leading causes of mortality differ greatly among low-income and middle-income countries (table 3.10) and between them and high-income countries (table 3.6). IHD and cerebrovascular disease are among the top four causes of death in all low- and middle-income regions except Sub-Saharan Africa, where they are eighth and seventh, respectively. Cerebrovascular disease is the leading cause of death in East Asia and the Pacific, unlike in most other regions, where IHD causes more deaths than cerebrovascular disease. In Sub-Saharan Africa, 6 of the top 10 causes are communicable diseases, with HIV/AIDS being the leading cause of death, followed by malaria and lower respiratory infections.

South Asia (mainly India) and Latin America and the Caribbean are the only two other low- and middle-income regions where HIV/AIDS is one of the top 10 causes of death. Lower respiratory infections, primarily pneumonia, are the third leading cause of death, especially among children under five, who account for 60 percent of these



Source: Authors' calculations.

Figure 3.7 Leading Causes of Premature Death (YLL) and of Deaths, Worldwide, 2001

deaths. Chronic obstructive pulmonary disease kills more people (1.4 million) in the East Asia and Pacific region, primarily China, than anywhere else in the world, with 50 percent of global mortality from the disease occurring there.

Europe and Central Asia differs from all other low- and middle-income regions in the size of the CVD epidemic (with almost 50 percent of deaths due to CVD), followed by trachea, bronchus, and lung cancers in third place. Self-inflicted injuries (suicide) are the fifth leading cause of death in this region. South Asia is the only other region where suicide is in the top 10 causes of death. Latin America and the Caribbean is distinguished as the only region where violence falls in the top 10 causes of death, responsible for 1 in 25 deaths. In all low- and middle-income regions apart from Europe and Central Asia, road traffic accidents are included among the top 10 causes of death, reaching fifth position in the Middle East and North Africa, where they are responsible for 1 in 20 deaths.

Years of Life Lost Due to Premature Death

In contrast to crude numbers of deaths, a time-based measure such as YLL allows us to identify those causes that account for premature deaths by giving greater weight to deaths at younger ages. Thus, while noncommunicable diseases accounted for nearly 60 percent of deaths globally in 2001, they accounted for only 40 percent of YLL, whereas injuries accounted for 12 percent of YLL and 9 percent of deaths.

Figure 3.7 compares the 10 leading causes of YLL and 10 leading causes of death for 2001. YLL give relatively greater importance to HIV/AIDS, perinatal conditions, and diarrheal diseases, whereas counts of deaths give relatively greater importance to IHD, stroke, and chronic obstructive pulmonary disease.

ESTIMATING INCIDENCE, PREVALENCE, AND YLD: METHODS AND DATA

This section provides an overview of the methods, software tools, and data sources used to calculate YLD for the GBD 2001 together with a short description of the disease models, assumptions, and data sources for important cause groups. Estimating YLD is the most complex and time-consuming component of burden of disease analysis, because it requires systematic assessments of the available evidence on incidence, prevalence, duration, and severity of a wide range of conditions. The GBD study has developed various methods to reconcile often fragmented and partial estimates available from different studies. A specific software tool, DisMod, described later, has been developed to assist in the analysis of epidemiological data and the preparation of internally consistent estimates.

Assessing YLD

YLD are essentially calculated as follows (ignoring the complications of discounting):

$$\text{YLD} = I \times D \times L,$$

where I is the number of incident cases in the reference period, D is the disability weight (in the range 0 to 1), and L is the average duration of disability measured in years. With discounting at rate r, the formula for calculating YLD becomes

$$\text{YLD} = I \times D \times [1-\exp(-rL)]/r.$$

To prepare consistent and unbiased estimates of YLD by cause, it is important to ensure that the disability weight and the population incidence and prevalence data relate to the same case definitions. The data required to estimate YLD are incidence, disability duration, age of onset, and distribution by severity class, all of which must be disaggregated by age and sex. These in turn require estimates of incidence, remission, and case fatality rates or relative risks by age and sex.

For some conditions, numbers of incident cases were available directly from disease registers or epidemiological studies, but for most conditions, only prevalence data were available. In these cases, the DisMod II software program was used to model incidence and duration from estimates of prevalence, remission, case fatality rates, and background mortality.

The sources of data and methods used for each of the major disease and injury groups are summarized in later subsections. Given the large number of categories analyzed and the paucity of epidemiological information for many of them, many of the disease models were necessarily simple and approximate. For most disease and injury groups, relevant experts were consulted during the development and revision of YLD estimates.

The disability weights used for the GBD 2001 are still largely based on the GBD 1990 disability weights and are summarized in annex tables 3A.6 to 3A.8. For certain conditions for which weights were not available from the original GBD study, provisional weights were used from Mathers, Vos, and Stevenson (1999) and Stouthard and others (1997).

As discussed earlier, the disability weights used in DALY calculations quantify societal preferences for different health states. These weights do not represent the lived experience of any disability or health state or imply any societal value of the person in a disability or health state. Thus, for example, disability weights of 0.57 for paraplegia and 0.43 for blindness quantify a social judgment that a year with blindness represents less loss of health than a year with paraplegia. It also means that, on average, a person who lives three years with paraplegia followed by death is considered to experience more equivalent healthy years than a person who has one year of good health followed by death (3 years $\times$ $[1 - 0.57] = 1.3$ "healthy" years is greater than 1 year of good health).

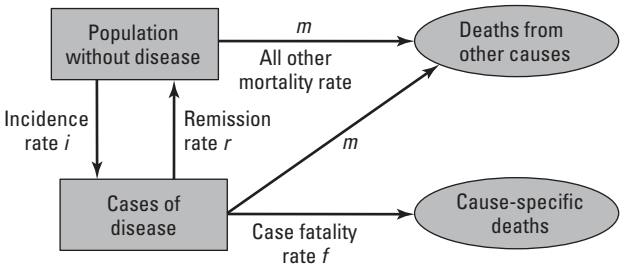
Ensuring Internal Consistency Using DisMod

Estimating prevalence and incidence is usually much harder than estimating mortality. Data collection, when done, is often limited in terms of both time and geographical area and problems of case definition abound. Not surprisingly, data are frequently incomplete, and when available, their validity may be in doubt. In particular, given differences in the way the data for incidence, prevalence, and mortality are collected, it is almost inevitable that observations are internally inconsistent. For example, when a cohort study misses more incident cases than deaths, the observed incidence will be too small to account for the observed mortality.

To address such issues, the GBD studies have exploited two kinds of knowledge. First, disease characteristics, such as remission, case fatality rates, and duration, may be relatively constant across countries and known from studies in some populations, from clinical studies, or from expert knowledge. Supplementing observed data with expert knowledge may help to overcome a lack of data. Second, because the various epidemiological variables are causally linked by a disease process, a disease model that explicitly describes these causal pathways allows us to infer missing data if existing data are sufficient to do so.

DisMod was developed for the original GBD study to help model the parameters needed for YLD calculations, to incorporate expert knowledge, and to check the consistency of different epidemiological estimates and ensure that the estimates used were internally consistent. Figure 3.8 shows the underlying model used by DisMod.

Based on experience with the DisMod software tool in the original GBD study, a new version, DisMod II, was developed with a number of additional features (Barendregt and others 2003). Unlike DisMod I, which used finite difference methods to "solve" the disease model, DisMod II implements an exact solution to the underlying differential equations. As well as calculating solutions when the three



Source: Barendregt and others 2003.

Figure 3.8 Disease Model Underlying DisMod

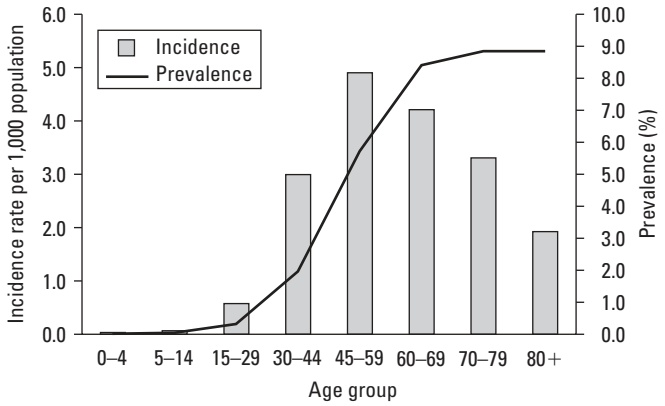
hazard rates (for incidence, remission, and mortality) are provided as inputs, DisMod II allows other combinations of inputs, such as prevalence, remission, and case fatality rates. In these cases, DisMod uses a goal-seeking algorithm to fit hazards such that the model reproduces the available input variables. DisMod II also has a range of advanced features, including the ability to undertake sensitivity analysis and uncertainty analysis, to give different weights to the various inputs, and to smooth inputs and specify age patterns for outputs. (The software may be downloaded from the WHO Web site at http://www.who.int/evidence/dismod.)

DisMod II was extensively used in the analyses for the GBD 2001 for four main purposes:

- to estimate a set of incidence rates by age from observed prevalences for a condition, given estimates of remission rates and cause-specific mortality risk derived from population data or epidemiological studies;
- to check whether available data for a condition are consistent with each other, for example, when separate estimates of incidence and prevalence were available for a condition;
- to calculate the average duration of incident cases, needed to calculate YLD for a condition;
- to extrapolate estimates in GBD age categories from epidemiological data for different age categories.

Whereas different assumptions regarding remission and case fatality rates affect the age distribution of incident cases and YLD estimates, total YLD are relatively insensitive to these assumptions if matched to a fixed prevalence distribution. This is because YLD estimates are proportional to incidence multiplied by duration, which approximately equals the prevalence of the condition. In other words, for most conditions the combination of incidence, case fatality, and remission rates (and thus derived durations) used in the YLD calculations makes relatively little difference to total YLD across age groups assuming the same prevalence figures are used as the basis. The effect of discounting complicates this, however, with low incidence and long duration conditions being more discounted than high incidence but short duration conditions.

Figure 3.9 illustrates the use of DisMod II to calculate the incidence of diabetes mellitus in males in Sub-Saharan Africa given estimates of the age-specific prevalence of cases, the relative risk of mortality for those with diabetes compared with those without diabetes (Roglic and others 2005), and the assumption that remission rates are zero.



Source: Authors' calculations.

Figure 3.9 Input Prevalences and Incidence Rates Estimated Using DisMod II, for Diabetes Mellitus Cases in Males, Sub-Saharan Africa

YLD Estimates for Regions in 2001

The GBD 2001 estimated incidence, prevalence, and YLD for 17 epidemiological regions based on the 6 WHO regions subdivided by 5 mortality strata. The five mortality strata were defined in terms of quintiles of the distribution of child and adult mortality for males in 1999 (WHO 2002d, pp. 233–5). These regions are defined in annex table 3A.4.

The Disease Control Priorities Project followed the World Bank approach in treating all high-income countries as one region even though they are not geographically contiguous, and then dividing the rest of the world into six geographic regions that together are referred to as low- and middle-income countries. These regions are defined in annex table 3A.1.

To estimate YLD by cause, age, sex, and region for 2001, incidence and prevalence rates were imputed from the 17 epidemiological subregions to the country level using cause-specific methods documented by Mathers, Murray, and Salomon (2003). Absolute incidence and prevalence numbers by age and sex were then added for all countries in each region to provide regional estimates for 2001. Because Version 3 estimates for 2000 had been prepared so that they were consistent with those for 2002, estimates for 2001 were imputed by averaging the Version 3 estimated cause-, age-, sex-, and country-specific rates for mortality, incidence, and prevalence for 2000 and 2002 and applying them to population data for 2001.

Overview of Data Sources

A wide range of data sources were used to analyze incidence, prevalence, and YLD for the GBD 2001. These included

- *Disease registers.* Disease registers record new cases of disease based on reports by physicians and laboratories.

Registers are common for infectious diseases, for instance, TB; cancer; congenital anomalies; for some relatively rare diseases, such as cystic fibrosis or thallassaemia; and sometimes for conditions such as diabetes, schizophrenia, and epilepsy.

- *Population surveys.* Interview surveys, such as the National Health Interview Survey in the United States, can provide self-reported information on disabilities, impairments, and diseases; however, self-reported data are generally not comparable across countries (Murray, Tandon, and others 2002; Sadana and others 2002). In addition, attributing impairment to the underlying causes is often difficult and frequently considerable differences are apparent between lay self-reporting of disease causes and actual underlying disease causes in terms of defined GBD disease categories. In general, the results of health examination surveys have contributed more to YLD calculations than self-reported interview surveys. The Composite International Diagnostic Interview (CIDI) and Diagnostic Interview Schedule (DIS) questionnaires used for mental health surveys are examples of standard questionnaires based on self-reporting that have undergone validity testing and have been used in assessing YLD for mental disorders for the GBD 2001.
- *Epidemiological studies.* Some of the most useful sources of information for the GBD 2001 were population-based epidemiological studies. In particular, longitudinal studies of the natural history of a disease have provided a wealth of information about incidence, average duration, levels of severity, remission, and case fatality rates. Such studies are rare because they are costly to undertake. In addition, as they are often conducted in a particular region or town, judgment is needed when extrapolating results to the entire population.
- *Health facility data.* In most cases, routine data on consultations by diagnosis were not found to be a great deal of use in estimating YLD. Unless coverage of the health system is virtually total, facilities-based data will be based on biased samples that do not reflect the prevalence or severity distributions of conditions in the community. Likewise, hospital deaths are unlikely to be useful because of the same problems of selection bias. Examples of conditions that were estimated from hospital data with national or quasi-national population coverage include perinatal and maternal conditions, meningitis, stroke, myocardial infarction, some sequelae identifiable from data on surgical interventions, and injuries.

The following sections provide an overview of data sources and methods for various specific causes and references to more detailed documentation. For some conditions, WHO programs maintain up-to-date databases based on diseases registers, population surveys, and epidemiological studies. These have been used where available. Many of the epidemiological reviews underlying the GBD 2001 estimates of YLD have been documented and published in draft form on the WHO Web site (http://www.who.int/evidence/bod) and in peer-reviewed publications.

While it is difficult to quantify the exact numbers of data sources used for the YLD estimates for the GBD 2001, table 3.11 provides an approximate count by region. This table counts the number of data sources (registers, notifications, health facility and other official data sets, and epidemiological studies) for each of the causes included in the GBD 2001. For some causes, the only counts available were of the number of countries in each region for which country-specific data were used. In some cases, an exact recount of studies by region was not feasible, and an approximate regional breakdown was estimated from prior counts according to 17 subdivisions of the 6 WHO regions used in WHO documentation of GBD analyses and data sources (Mathers, Lopez, and others 2003). In addition, it was not always possible to be consistent in the counting of studies carried out across multiple countries or multiple years. Finally, note that there is huge variability in the information content across studies or data sets, and that small epidemiological studies are counted equally in table 3.11 with national hospital inpatient data on injuries for an entire population-year. Thus the counts in table 3.11 should be treated as reasonably indicative of the empirical bases underlying the GBD 2001 without overinterpreting differences between causes or regions.

That said, it is striking that of the more than 8,000 data sets estimated to have been used for the GBD 2001 estimation of YLD, nearly 6,600 relate to Group I causes and only 18 to Group III causes. Furthermore, one-quarter of the data sets relate to populations in Sub-Saharan Africa and around one-fifth to populations in high-income countries. While this predominance of data relating to Group I conditions and to Sub-Saharan Africa is not entirely surprising, the paucity of data for some of the leading noncommunicable diseases is more surprising. For example, for several of the leading causes of burden among mental disorders, one or no usable population-based studies were found for some regions, and for IHD, few studies of the incidence or prevalence of angina pectoris or acute myocardial infarction were found outside high-income countries.

Table 3.11 Numbers of Country Data Sources Contributing to the Estimation of YLD, by Region and Cause

GBD cause category	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	High-income countries	Total[a]
I. Communicable, maternal, perinatal, and nutritional conditions								
Tuberculosis[b]	24	27	34	16	8	39	31	179
Sexually transmitted diseases excluding HIV/AIDS[c]	143	318	148	45	99	406	297	1,456
HIV/AIDS[b]	14	26	27	13	5	37	29	150
Diarrheal diseases	155	0	27	55	29	91	0	357
Childhood-cluster diseases[d]								
Pertussis	14	33	64	14	8	45	124	302
Poliomyelitis	22	27	32	15	8	47	37	192
Diphtheria	12	25	2	14	8	46	8	115
Measles	22	18	32	12	8	47	22	127
Tetanus	48	23	27	40	32	79	34	289
Meningitis	23	18	30	12	4	27	43	157
Hepatitis B	4	4	6	6	10	11	28	69
Hepatitis C[e]	36	23	41	37	8	56	85	286
Malaria	9	0	2	1	7	98	0	117
Tropical-cluster diseases								
Trypanosomiasis[b]	0	0	0	0	0	36	0	36
Chagas' disease	0	0	31	0	0	0	0	31
Schistosomiasis	6	0	3	8	0	37	1	55
Leishmaniasis[f]	3	7	15	13	4	20	4	66
Lymphatic filariasis[b]	29	0	8	5	5	40	2	89
Onchocerciasis	0	0	6	0	0	26	0	32
Leprosy[b]	32	10	8	14	8	45	3	120
Dengue[g]	91	0	170	0	4	2	15	282
Japanese encephalitis[b]	10	1	0	0	3	0	4	18
Trachoma	11	0	4	5	4	19	0	43
Intestinal nematode infections	29	0	23	13	10	53	6	134
Lower respiratory infections	15	0	15	12	30	18	5	95
Otitis media	4	0	0	2	2	7	9	24
Maternal conditions								
Maternal hemorrhage	3	0	2	0	1	13	9	28
Maternal sepsis	2	0	3	0	1	14	11	31
Hypertensive disorders of pregnancy	1	0	1	0	2	12	2	18
Obstructed labor	2	0	2	0	1	14	2	21
Abortion	32	10	11	13	49	156	27	32
Perinatal conditions								
Low birthweight[h]	28	27	33	15	7	41	33	184
Birth asphyxia and birth trauma	7	0	7	11	19	12	0	56
Nutritional deficiencies								
Protein-energy malnutrition[i]	61	28	116	37	30	132	15	419
Iodine deficiency	17	13	13	17	12	44	20	136
Vitamin A deficiency	10	2	12	4	4	29	8	67
Iron-deficiency anemia	14	1	1	15	5	33	0	69
II. Noncommunicable diseases								
Malignant neoplasms								
Incidence	11	8	11	10	2	14	25	81
Survival	3	4	1	0	1	0	15	24

(Continues on the following page.)

Table 3.11 Continued

GBD cause category	East Asia and Pacific	Europe and Central Asia	Latin America and the Caribbean	Middle East and North Africa	South Asia	Sub-Saharan Africa	High-income countries	Total[a]
Diabetes mellitus – type 1[j]	22	12	17	5	1	2	41	100
Diabetes mellitus – type 2	6	4	5	8	3	6	8	40
Neuropsychiatric conditions								
Unipolar depressive disorders	5	5	6	3	4	6	27	56
Bipolar affective disorder	2	1	1	1	2	0	14	21
Schizophrenia	4	3	3	1	3	6	25	45
Epilepsy[k]	1	1	6	1	4	8	7	28
Alcohol use disorders	24	43	39	13	5	34	56	214
Alzheimer's and other dementias	10	3	3	0	4	3	87	110
Parkinson's disease[k]	2	1	1	0	1	1	7	13
Multiple sclerosis	4	24	3	5	1	1	116	154
Drug use disorders	11	11	18	10	6	15	43	114
Post-traumatic stress disorder	1	0	1	0	0	0	6	6
Obsessive-compulsive disorder	2	0	3	0	1	0	14	20
Panic disorder	2	0	3	1	0	2	22	30
Insomnia (primary)	2	2	5	1	1	1	9	21
Migraine	6	2	5	2	0	1	11	43
Mental retardation attributable to lead exposure	10	12	21	4	14	9	23	93
Sense organ diseases								
Vision disorders[b]	11	3	4	5	4	19	9	55
Hearing loss, adult onset	5	0	1	1	5	1	12	25
Cardiovascular diseases	0	0	0	0	0	0	0	0
Rheumatic heart disease	15	0	12	9	15	26	7	84
Ischemic heart disease	3	11	0	2	4	1	58	79
Cerebrovascular disease	4	8	1	5	0	6	28	52
Other cardiovascular diseases	0	0	0	0	0	0	5	5
Respiratory diseases								
Chronic obstructive pulmonary disease	24	10	10	4	16	8	32	104
Asthma	17	14	20	12	6	7	74	149
Musculoskeletal diseases								
Rheumatoid arthritis	4	1	4	4	2	5	9	29
Osteoarthritis	1	1	1	0	2	1	9	15
Congenital malformations	3	42	29	6	9	6	5	100
Oral conditions[f]	22	24	32	15	7	35	27	162
III. Injuries	**3**	**1**	**1**	**0**	**0**	**6**	**7**	**18**
Total[l]	**1,155**	**914**	**1,239**	**590**	**522**	**1,955**	**1,735**	**8,096**

Source: Authors' compilation.

Note: The data sources include population-based epidemiological studies, disease registers, and surveillance and notification systems, but exclude death registration data (see tables 3.1 and 3.2). Where possible, regional and global totals refer to numbers of separate studies, or country-years of reported data from surveillance or notification systems. For some causes, regional subtotals for the Disease Control Priorities Project regions were estimated from subtotals for WHO regions and subregions. See text for more information on data sources for specific causes.

a. Global totals may include global review studies not counted in regional subtotals.

b. Totals refer to numbers of countries for which data were available, not to total data sets or country-years.

c. Regional subtotals were estimated from the current distribution of studies in the WHO sexually transmitted infection (STI) surveillance database.

d. Regional subtotals were estimated from numbers of studies by WHO region, rather than by re-accessing original databases.

e. Country-years of data available for 133 countries.

f. Approximate estimate from current WHO database; original extraction from surveillance data sources is not available.

g. Country-years of surveillance reports (approximate, minimum estimate for Latin America and the Caribbean).

h. Estimate based on final published literature review.

i. Regional distribution of the 419 national studies used is assumed to be similar to that of the current 442 national studies in the WHO malnutrition database.

j. Total of 100 population-based registries in 50 countries.

k. Approximate minimum estimate. Several global reviews were used; studies were not separately counted.

l. Actual numbers of studies used exceed the minimums shown here, based on summed table entries for specific causes regardless of whether counts were of data sets or of countries.

Assuming that for causes in table 3.11 where the counts relate to countries rather than to data sets there are, on average, two data sets per country; then overall, approximately 8,700 data sets contributed to the estimation of YLD. Not counting again studies that also contributed to the estimation of cause-specific mortality rates, an additional 1,370 data sets were used to estimate YLL. In total, the GBD 2001 has drawn on more than 10,000 data sets or studies, making it almost certainly the largest synthesis and analysis of global population health data carried out to date.

Communicable Diseases and Maternal, Perinatal, and Nutritional Conditions

This section gives an overview of data sources and methods for specific Group I causes and references to more detailed documentation.

Tuberculosis. Estimates of incidence and deaths due to TB (excluding HIV-infected persons) for countries in 2001 formed the basis of estimates of TB prevalence in 2001. The methods and data used to estimate incidence and mortality for each country were described earlier. For countries with VR data for TB deaths, incidence estimates have been revised to be consistent with estimated deaths, estimated case fatality rates for treated and untreated cases, and proportion of incident cases treated.

Estimated prevalence of all forms of TB (excluding HIV-infected persons) for 2001 was calculated by multiplying estimated incidence by estimated duration. Country-specific estimates of duration were weighted for the proportion of cases treated and that were smear-positive.

Sexually Transmitted Infections Other Than HIV/AIDS. More than 300 community-based and prenatal care-based prevalence and incidence studies of pregnant women were used to generate region-specific estimates of the prevalence of syphilis, chlamydia, and gonorrhea. The methodology is described in detail elsewhere (Gerbase and others 1998; WHO 2001c) and was used to update estimates to 2001.

HIV/AIDS. The Joint United Nations Programme on HIV/AIDS and WHO have developed country-specific estimates of HIV/AIDS for most countries and revise them periodically to account for new data and improved methods (Salomon and Murray 2001b; Schwartlander and others 1999; Walker and others 2003). For the most recent round of estimates, they used two different types of models, one for generalized epidemics and one for epidemics concentrated in high-risk groups.

For a few countries where prevalence estimates for HIV seropositive cases were not directly available, they were derived by scaling regional prevalence estimates according to the ratio of country-specific HIV/AIDS mortality to regional HIV/AIDS mortality. Because different countries may be in different phases of the epidemic, the relationship between prevalence and mortality may vary across countries.

Diarrheal Diseases. To estimate the incidence of diarrheal diseases in children under five in developing and developed countries, 357 community-based studies and population surveys were used (Bern 2004; Murray and Lopez 1996d). Point prevalences were estimated assuming an average duration of six days per episode. Work is currently in progress to update these estimates with more recent evidence from community-based studies.

Vaccine-Preventable Childhood Diseases and Meningitis. The methods used to estimate incidence for childhood-cluster diseases were summarized earlier. The incidence of meningitis due to *Haemophilus influenzae* type b together with the incidence of meningitis due to *Streptococcus pneumoniae* and *Neisseria meningitides,* was updated from the 1990 estimates using information from the WHO Vaccines and Biologicals Program derived from country notifications of cases and deaths, from WHO surveillance centers and, where relevant, from immunization coverage data (WHO 2001b).

Hepatitis B and C. Available data on the prevalence of chronic hepatitis B and hepatitis C infection were used together with disease models to estimate regional incidence and mortality rates (Global Burden of Hepatitis C Working Group 2004; Lavanchy 2004; WHO 2002a, 2002b).

Malaria. Malaria prevalence was based on regional prevalence rates for acute symptomatic episodes estimated by Murray and Lopez (1996d). Country-specific estimates of malaria prevalence were derived by adjusting subregional prevalence by the ratio of country to subregional malaria mortality. Work is currently under way in collaboration with other WHO programs and external expert groups to refine and revise these country-specific estimates of malaria prevalence (Korenromp 2005).

Schistosomiasis. The *CEGET/WHO Atlas of the Global Distribution of Schistosomiasis* (Doumenge and others 1987)

and population-based prevalence studies were used to estimate country-specific prevalence rates. Prevalence estimates were based on regional prevalence rates for schistosomiasis infection (Murray and Lopez 1996d) applied to updated estimates of country-specific populations at risk in 2001 (van der Werf and de Vlas 2001).

Lymphatic Filariasis. Estimates for lymphatic filariasis were developed for six of the eight regions defined for the GBD 1990 study (Murray and Lopez 1996d). The established market economies and formerly socialist economies of Europe were excluded, because infection was not considered to be endemic in these countries. The prevalence data were obtained from community-based surveys and complemented with reports by the Information and Reference Service of the Parasitic Diseases Program, WHO. Prevalence estimates were based on regional prevalence rates for cases of hydrocele or lymphodaema caused by infection with filariae. These estimates were updated using estimates of country-specific populations at risk in 2001 provided by the WHO Lymphatic Filariasis Elimination Program.

Onchocerciasis. In the early 1990s, WHO estimated the prevalence of blindness due to onchocerciasis from surveys and national reports (WHO 1995). Following the continued success of the Onchocerciasis Control Program in western African countries and the introduction of population-wide administration of ivermectin in other endemic areas, the prevalence of onchocerciasis and its disabling sequelae has been dramatically reduced in all 36 endemic countries in Latin America and the Caribbean and Sub-Saharan Africa (Richards and others 2001). Therefore, the prevalence of blindness from onchocerciasis was reestimated by taking into account the declining trends in prevalence and the coverage and duration of onchocerciasis control programs (Alley and others 2001).

Reliable sources of information on the prevalence of blindness due to onchocerciasis are available from several population-based studies, usually as part of an overall blindness survey. However, prevalence studies of onchocerciasis-specific blindness are often carried out in hyperendemic areas and/or in local communities, and thus the estimated prevalence may not be generalizable to the country as a whole. For this reason, the current prevalence of blindness due to onchocerciasis was estimated by nationally reported data, if available, and extrapolation from 1993 estimates using trend analysis of onchocerciasis control programs in each endemic country (Shibuya and Ezzati 2003).

Leprosy. Regional incidence and prevalence rates for leprosy were based on case reporting and surveillance by 120 WHO member states (Stein 2002a; WHO 2002c).

Dengue and Dengue Hemorrhagic Fever. Regional incidence and prevalence rates for dengue and dengue hemorrhagic fever were based on a review of nearly 300 population-based studies, but data were sparse for regions apart from East Asia and the Pacific and Latin America and the Caribbean (LeDuc, Esteves, and Gratz 2004).

Trachoma. The baseline regional and subregional prevalence of blinding trachoma was first estimated as described elsewhere (Frick and others 2003; Ranson and Evans 1995) and then updated using several recent population-based studies in the Middle East and North Africa and Sub-Saharan Africa. As the prevalence of blinding trachoma declines with socioeconomic development even in the absence of a specific trachoma control program (Dolin and others 1997), the extrapolation from regional prevalence estimates made in the 1980s would overestimate current prevalence. For this reason, both nationally reported data and specific criteria for a regression model of time-series data were used to estimate the prevalence of blinding trachoma. The model estimates were then applied to countries that have reported cases of blinding trachoma (Shibuya and Mathers 2003).

Intestinal Nematode Infections. Updated estimates of the prevalence of intestinal nematode infections were based on WHO's new global databank on schistosomiasis and soil-transmitted helminths, which contains data derived from community-based, cross-sectional surveys for subnational administrative regions (Brooker and others 2000; de Silva and others 2003). In areas without comprehensive data, predictions of the distribution of soil-transmitted helminths were developed using environmental data derived from satellite remote sensing (Brooker and others 2002). Incidence rates and YLD for disabling sequelae of helminth infections were modeled using a mathematical model developed by Chan and others (Bundy and others 2004; Chan 1997).

Lower Respiratory Infections. Prevalence and incidence estimates for lower respiratory infections were based on an analysis of published data on the incidence of clinical pneumonia from 95 community-based studies published since 1961 (Rudan and others 2004). Most of the studies were longitudinal and conducted over long enough periods to account for seasonal variation. Studies over short periods of time were excluded.

Maternal Conditions. Incidence rates for maternal conditions and disabling sequelae were derived from reviews of published population-based studies supplemented by studies of hospital-based deliveries adjusted for the proportion of deliveries occurring in hospitals (Dolea and AbouZahr 2003a, 2003b; Dolea, AbouZahr, and Stein 2003; Dolea and Stein 2003). The incidence of unsafe induced abortion was estimated at the country level using 156 published and unpublished reports for 131 countries together with information on legal and social contexts (Ahman, Dolea, and Shah 2003; WHO 2004a).

Perinatal Conditions. Incidence rates for low birthweight, birth asphyxia and trauma, and disabling sequelae were derived from health service–based data and national birth registration systems in high-income countries and from mothers participating in nationally representative household surveys (such as the U.S. Agency for International Development–funded DHSs and the Multiple Indicator Cluster Surveys carried out by the United Nations Children's Fund), supplemented by reviews of published population-based and hospital-based studies (UNICEF and WHO 2005).

Protein-Energy Malnutrition. More than 400 recent nationally representative studies from WHO's global database on child growth and malnutrition (http://www.who.int/nutgrowthdb/) were used to estimate the prevalence of child stunting and wasting in every country (de Onis and Blossner 2003; de Onis, Frongillo, and Blossner 2000; de Onis and others 2004). Where country estimates were not available from the database, the regional average calculated from the available studies or data from other countries with similar epidemiological characteristics were used (Stein 2002c).

Iodine Deficiency and Vitamin A Deficiency. Country-specific estimates for goiter rates were obtained and used to calculate regional estimates for total goiter rates. The primary data source was the WHO Nutrition and Health for Development Program, which is developing and refining a comprehensive database of country-specific estimates of both clinical and subclinical iodine deficiency disorders from national level and subnational nutrition surveys (Rastogi and Mathers 2002a; WHO 2001a; WHO Nutrition Program 2005).

Country-specific estimates were obtained and used to calculate regional estimates for both xerophthalmia and corneal scars resulting from vitamin A deficiency (Rastogi and Mathers 2002c). Again, the primary data source was the WHO Nutrition and Health for Development Program, which is also developing and refining a comprehensive database of country-specific estimates of both clinical and subclinical vitamin A deficiency from national-level and subnational nutrition surveys (WHO Nutrition Program 2002b). The database compiles information for all population groups, especially preschool-age children and women of childbearing age, and includes information on the prevalence of xerophthalmia, including night blindness and serum retinol distributions.

Iron Deficiency Anemia. Country-specific prevalence estimates of iron deficiency anemia were obtained from 69 studies and used to estimate regional age- and sex-specific prevalence rates for mild, moderate, and severe anemia. The primary data source was the WHO Nutrition and Health for Development Program. The program is currently preparing a comprehensive database of country-specific prevalence estimates of both clinical and subclinical iron deficiency anemia from national-level and subnational nutrition surveys (WHO Nutrition Program 2002a).

All prevalence estimates were reviewed, with priority being given to the most recent national-level estimates (most were obtained from studies conducted in the last 10 years). For countries for which no studies were available, the regional average was applied (Rastogi and Mathers 2002b).

Noncommunicable Diseases

This section gives an overview of data sources and methods for specific Group II causes and references to more detailed documentation.

Malignant Neoplasms. Regional survival models were developed for each cancer site and used to estimate numbers of incident cases from estimated deaths by site for each country (Mathers, Shibuya, and others 2002; Shibuya and others 2002). The same models were used to estimate numbers of prevalent cases, defined as cases of malignant neoplasms causing death within 15 years, and cases of nonfatal malignant neoplasms (where the person is likely to survive 15 years or more) diagnosed within the last five years.

Diabetes Mellitus. Diabetes prevalence estimates for those age 20 and older were based on an analysis of 41 representative population-based studies that used oral glucose tolerance tests and either 1980 WHO criteria to define diabetes cases or similar criteria that produced comparable prevalences (Wild and others 2004). For countries for which eligible data were not available, data from a proxy country believed to have similar diabetes prevalence were used. Most

studies of diabetes prevalence did not indicate the type of diabetes, and consequently the estimates refer to all diabetes. The prevalence of diabetes among people under 20 years of age was estimated from incidence data derived from 100 published studies (Karvonen and others 2000).

Depressive Disorders. Point prevalence estimates for episodes of unipolar major depression were derived from a systematic review of available published and nonpublished population studies on depressive disorders, which identified 56 studies from all World Bank regions (Ustun and others 2005). Variations in the prevalence of unipolar depressive disorders in some European countries, Australia, Japan, and New Zealand were estimated directly from relevant population studies (Ayuso-Mateos and others 2001). For other high-income European countries, country-specific prevalences were estimated using a regression model of available prevalence data on suicide rates (for ages 15 to 59, both sexes combined). For other regions, prevalence estimates were based on regional prevalence rates applied to country-specific population estimates for 2002. Unlike the original GBD study, survey data on the severity of unipolar depressive disorders (mild, moderate, or severe) were used together with disability weights for these three severity classes from Stouthard and others (1997). This resulted in an overall disability weight for unipolar depressive disorders across regions from 0.30 to 0.46. This compares reasonably well with a more recent analysis of the distribution of depression by severity and disability weights for a Dutch community, which resulted in an overall disability weight of 0.41 (Kruijshaar and others 2005). YLD due to dysthymia not associated with major depressive episodes were estimated separately using the disability weight for mild depressive disorders.

Subregional prevalence rates for bipolar disorder were derived from a systematic review of all available published and unpublished population studies using case definitions that met the diagnostic criteria of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV) of the American Psychiatric Association (1994) or of ICD-10 (Ayuso-Mateos 2002a).

Anxiety Disorders and Schizophrenia. Subregional prevalence rates for panic disorder, obsessive-compulsive disorder, and post-traumatic stress disorder were also derived from systematic reviews of all available published and unpublished population studies using case definitions that met ICD-10 or DSM-IV criteria (Ayuso-Mateos 2002b, 2002c, 2002d; Ustun and Chisholm 2001). Those with comorbid depressive disorder or alcohol or drug use disorders were excluded from prevalence estimates. For data sources and methods for schizophrenia see Ayuso-Mateos (2002d).

Alcohol and Drug Use Disorders. The case definition for alcohol use disorders is based on ICD-10 criteria for alcohol dependence and harmful use, excluding cases with comorbid depressive episode. DSM-IV alcohol abuse is included in the case definition. All available population-based surveys using diagnostic criteria that could be mapped to this case definition were identified. Population estimates of the point prevalence of alcohol use disorders were obtained from 55 studies (Mathers and Ayuso-Mateos 2003).

Published data on alcohol production, trade, and sales, adjusted for estimates of illegally produced alcohol, were used to estimate country averages of the volume of alcohol consumed. These preliminary estimates were then further adjusted on the basis of survey data on alcohol consumption to estimate the prevalence of alcohol use disorders for countries where recent population-based survey data were not available (Rehm and others 2004).

Estimating the prevalence of illicit drug use is difficult, because the use of these drugs is illegal, stigmatized, and hidden. In addition, definitions differ from country to country, as does the quality of data collected. The definition used for the GBD 2001 was based on ICD-10 criteria for opioid dependence and harmful use or cocaine dependence and harmful use, excluding cases with comorbid depressive episodes. Data on the prevalence of problematic illicit drug use were derived from a range of sources (Degenhardt and others 2003). A literature search was conducted of all studies that estimated the prevalence of problematic drug use and more than 100 studies were identified. Other data sources included the United Nations Drug Control Program and the European Monitoring Centre for Drugs and Drug Addiction.

Insomnia (Primary). Subregional prevalence rates for primary insomnia were derived from systematic reviews of all available published and unpublished population studies using case definitions that met ICD-10 or DSM-IV criteria, where the insomnia causes problems with usual activity and is not secondary to other diseases. Persons with comorbid depressive disorder or alcohol or drug use disorders were excluded from the prevalence estimates.

Epilepsy and Multiple Sclerosis. Subregional prevalence rates for epilepsy, excluding epilepsy or seizure disorder secondary to other diseases or injury, were derived from systematic reviews of available published and unpublished

population studies. Subregional prevalence rates for multiple sclerosis, derived for the GBD 1990, were updated using recent epidemiological studies (Warren and Warren 2001).

Alzheimer's Disease and Other Dementias. Subregional prevalence rates, incidence rates, and durations for Alzheimer's disease and other dementias were estimated based on 110 available population studies and assumed to apply to countries within each subregion (Mathers and Leonardi 2003).

Parkinson's Disease. Regional incidence to mortality rates for Parkinson's disease estimated by Murray and Lopez (1996d) were used to derive country-specific estimates for incidence from the estimated country-specific mortality rates.

Migraine. Regional prevalence rates for people who experience migraine were estimated from 43 available population studies and assumed to apply to countries within each subregion (Leonardi and Mathers 2003). Migraine has been treated as a chronic disease lasting from 15 years to around 45 years with sporadic episodes. The case definition was taken from the International Headache Society's definition of migraine. Available population studies using this definition provided prevalence estimates that were quite similar across most regions.

Mental Retardation. An attempt was made to assess the prevalence of all forms of mental retardation, but due to difficulties with data comparability, we decided to assess only the burden resulting from childhood exposure to environmental lead, plus mental retardation estimated as sequelae to diseases or injuries or associated with specific congenital malformations. The YLD associated with mental retardation as a sequela of diseases and injuries or as a component of a syndrome are included in the estimation of total YLD for such causes in the tables presented in annex 3C. In addition, YLD were estimated separately for mental retardation as a consequence of environmental lead exposure, because this was required for the assessment of the total attributable burden of environmental lead exposure. For details of methods and data sources see Fewtrell and others (2004) and Pruss-Ustun and others (2004).

Low Vision and Blindness. Both regional and subregional prevalences for blindness and low vision were updated using all available data gathered since 1980 (Resnikoff and others 2004; Thylefors and others 1995). Subregional prevalences were estimated from more than 50 cross-sectional, population-based surveys of blindness and low vision, both published and unpublished. For countries for which no data were available, prevalences were extrapolated from available data for neighboring subregions or countries with a similar epidemiological and socioeconomic environment. The DisMod software was then used to obtain internally consistent age- and sex-specific estimates of incidence, prevalence, remission, and relative risks of mortality. Ratios of blindness to low vision for each region were used to estimate the prevalence of low vision and DisMod analyses were then carried out to ensure internal consistency among parameters.

Hearing Loss. Despite the number of published studies on hearing loss, many of them use different criteria and relate to subnational or nonrepresentative populations. Data from 25 representative population surveys of measured hearing loss (19 surveys for adults and 14 surveys for children) were used to estimate subregional prevalences of moderate or greater hearing loss according to the WHO definition (hearing threshold level in the better ear is 41 decibels or greater averaged over 0.5, 1.0, 2.0, and 4.0 kilohertz) and of severe or greater hearing loss (hearing threshold level in the better ear is 61 decibels or greater averaged over 0.5, 1.0, 2.0, and 4.0 kilohertz) (Mathers, Smith, and Concha 2003). Regional estimates of the prevalence of hearing aid use were used in the calculation of average disability weights for moderate, severe, and profound hearing loss in each region, and thus to calculate YLD associated with hearing loss.

Congestive Heart Failure. The incidence of congestive heart failure following acute myocardial infarction was estimated using a model for IHD based on available population data on incidence and case fatality rates for acute myocardial infarction and on the proportion of acute myocardial infarction patients who go on to develop congestive heart failure (Mathers, Truelson, and others 2004). The incidence of congestive heart failure as a sequela to rheumatic heart disease, hypertensive heart disease, and inflammatory heart diseases was estimated using incidence to mortality ratios from the GBD 1990 (Murray and Lopez 1996d).

Angina Pectoris. The GBD 2001 study developed a model for IHD based on available population data on the incidence and case fatality rates for acute myocardial infarction and on the prevalence and case fatality rates for angina pectoris (Mathers, Truelson, and others 2004). Observed correlations between the prevalence of acute myocardial infarction survivors and the prevalence of angina pectoris (whether incident before or after acute myocardial infarction) were used

to estimate the prevalence of angina pectoris from the modeled prevalences of acute myocardial infarction survivors. The latter were estimated from country-specific IHD mortality estimates together with estimated regional case fatality rates for acute myocardial infarction.

Stroke. The GBD 2001 study developed a model for stroke based on available population data on case fatality rates within 28 days for incident cases of first-ever stroke and on long-term survival in cases surviving this initial period, in which the risk of mortality is highest (Truelsen and others 2002). A consistent relationship between incidence, prevalence, and mortality was established using U.S. data. The resulting age- and sex-specific 28-day and long-term case fatality rates were used as the basis for estimating subregional case fatality rates after adjusting for the observed relationship between GDP per capita and overall 28-day case fatality rates in published studies from various countries. Consistent epidemiological models for the prevalence of stroke survivors in each subregion were then estimated using these case fatality rates and observed mortality after adjustment to account for the fact that deaths recorded as resulting from stroke in vital statistics do not fully reflect the true excess risk of mortality among survivors.

Chronic Obstructive Pulmonary Disease. Chronic obstructive pulmonary disease is characterized by airway obstruction with lung function levels of forced expiratory volume in one second (FEV_1) to forced vital capacity ratio of less than 70 percent and the presence of a postbronchodilator FEV_1 of less than 80 percent of the predicted value that is not fully reversible. Because accurate prevalence data based on spirometry are not available in many regions, an alternative approach was used to infer disease occurrence from regional estimates of mortality due to chronic obstructive pulmonary disease that made use of the constraints imposed by the consistent epidemiological relationships among prevalence to incidence, remission, case fatality, and mortality rates**.** The relative risk of mortality due to chronic obstructive pulmonary disease across subregions was estimated as a function of its two leading risk factors—tobacco smoking and indoor air pollution from solid fuel used for cooking—along with regional fixed effects (Lopez and others forthcoming). Data on risk factors were derived from the comparative risk assessment carried out for the *World Health Report 2002* (Ezzati and others 2002; WHO 2002d). The estimated relative risks were validated by comparing estimated regional prevalence with data from available population studies. For regions where surveys of representative populations based on spirometry were available, both direct estimation and model estimation were used.

Asthma. Asthma prevalence estimates were based on a case definition requiring a positive airway hyper-responsiveness test in addition to symptoms in the last 12 months. Specifically, the prevalence estimates related to cases defined in terms of reported wheeze in the last 12 months plus current bronchial hyper-responsiveness, defined as a mean provocation concentration of histamine required to produce a 20 percent fall in FEV_1 of 8 milligrams per milliliter or less.

While epidemiological studies commonly use a broader definition of asthma based on symptom reporting, the 2001 GBD study used a narrower definition in order to identify cases experiencing a significant loss of health. The disability threshold for inclusion in the prevalence estimates is mild asthma, defined as occasional wheeze that does not affect usual activities, but which, if untreated, may result in occasional episodes that cause sleep disturbance and/or speech limitations.

A review of published literature identified studies using the foregoing definition, but also many studies using self-reported symptoms only, self-reported current asthma (asthma attack in the last 12 months or currently in treatment), or physician diagnosis of current asthma in the last 12 months. Based on study populations for which prevalence data were available according to one of these alternative definitions, as well as the foregoing stricter definition, we calculated adjustment factors to estimate asthma prevalence from community surveys using other definitions of asthma.

A total of 149 population-based studies were used to derive estimates of asthma prevalence for a wide range of countries for children, teenagers, and adults. In particular, extensive use was made of two multicountry studies: the International Study of Asthma and Allergies in Childhood using self-reported symptoms in children ages 6 to 7 and 13 to 14 (ISAAC Steering Committee 1998a, 1998b), and the European Community Respiratory Health Survey of adults ages 20 to 44 using self-reported symptoms and bronchial hyper-responsiveness (Chinn and others 1997; Pearce and others 2000). Estimates from the population-based studies were then used to derive subregional average prevalence rates, which were assumed to apply in countries without specific population studies.

Rheumatoid Arthritis. Subregional prevalence rates for rheumatoid arthritis were derived from available published population studies using case definitions for definite or

classical rheumatoid arthritis (Symmons, Mathers, and Pfleger 2002b).

Osteoarthritis. Subregional prevalence rates for osteoarthritis were derived from available published population studies that provided prevalence data for symptomatic osteoarthritis of the hip or knee, radiologically confirmed as Kellgren-Lawrence grade 2 or greater (Symmons, Mathers, and Pfleger 2002a).

Edentulism. Prevalence numbers were based on regional prevalence rates for edentulism estimated by Murray and Lopez (1996d). New data from the 2002–4 WHO World Health Survey will enable revision of these estimates in the future.

Injuries

An incident episode of a nonfatal injury is defined as an episode that is severe enough for the person to be hospitalized or that requires emergency room care (if such care is available). Begg and others (2002) describe methods used to estimate injury-related prevalences and prevalence YLD. In brief, the incidence of nonfatal injuries by external cause category, age, and sex was estimated by applying regional and country-specific death to incidence ratios to the injury deaths estimated for each country in 2002.

Age- and sex-specific ratios were based on new analyses of health facility data provided by 18 countries in five World Bank regions. For most cause categories, extrapolations from observed death to incidence ratios were derived for all countries at a regional level, with final adjustments using mortality and per capita GDP as predictors of expected variability in case fatality rates.

Prevalences for disabling injuries were estimated from the proportions of cases by injury type estimated to result in long-term disability, together with estimates of short- and long-term disability durations. The latter were based on analyses of excess mortality risks from epidemiological studies (Begg and others 2002).

BURDEN OF DISABILITY AND POOR HEALTH IN 2001

As defined earlier, YLD measure the equivalent years of healthy life lost through time spent in states of less than full health. The original GBD study brought the previously largely ignored burden of nonfatal illnesses, particularly mental disorders, to the attention of health policy makers. The findings of the GBD 2001, based on updated data and analyses, confirm that disability and states of less than full health caused by diseases and injuries play an important role in determining the overall health status of populations in all regions of the world.

Leading Causes of YLD in 2001

Tables 3.12 and 3.13 show the 10 leading causes of YLD(3,0) by broad income group and by sex. A relatively short list of causes dominates the overall burden of nonfatal disabling conditions. In both income regions, neuropsychiatric conditions are the most important causes of disability, accounting for more than 37 percent of YLDs(3,0) among adults ages 15 and over. The disabling burden of neuropsychiatric conditions is almost the same for males and females, but the major contributing causes are different. While depression is the leading cause for both males and females, the burden of depression is 50 percent higher for females than for males, and females also have a higher burden from anxiety disorders, migraine, and senile dementias. In contrast, the male burden for alcohol and drug use disorders is nearly six times higher than that for females and accounts for one-quarter of the male neuropsychiatric burden.

Globally, cataracts and age-related vision disorders together account for more than 9 percent of total YLD(3,0), and adult-onset hearing loss accounts for another 5.2 percent. Adult-onset hearing loss is extremely prevalent, with more than 27 percent of men and 24 percent of women aged 45 and over experiencing mild hearing loss or greater. The GBD 2001 has estimated only the burden of moderate or greater hearing loss. Childhood-onset hearing loss is not included in this cause category, as most childhood hearing loss is due to congenital causes, infectious diseases, or other diseases or injuries, and is included as sequelae for such causes in the estimation of the burden of disease.

In both low- and middle-income countries and high-income countries, alcohol use disorders are among the 10 leading causes of YLD(3,0). This includes only the direct burden of alcohol dependence and problem use. The total attributable burden of disability due to alcohol use is much larger (see chapter 4).

More than 80 percent of global nonfatal health outcomes occur in developing countries, and high-mortality developing countries account for nearly half of all YLD. Although the prevalences of disabling conditions such as dementia and musculoskeletal disease are higher in countries with long life expectancies, this is offset by lower contributions to disability from conditions such as CVD, chronic respiratory

Table 3.12 The 10 Leading Causes of YLD by Broad Income Group, 2001

Low- and middle-income countries			High-income countries		
Cause	YLD (millions of years)	Percentage of total YLD	Cause	YLD (millions of years)	Percentage of total YLD
1 Unipolar depressive disorders	43.22	9.1	1 Unipolar depressive disorders	8.39	11.8
2 Cataracts	28.15	5.9	2 Alzheimer's and other dementias	6.33	8.9
3 Hearing loss, adult onset	24.61	5.2	3 Hearing loss, adult onset	5.39	7.6
4 Vision disorders, age-related	15.36	3.2	4 Alcohol use disorders	3.77	5.3
5 Osteoarthritis	13.65	2.9	5 Osteoarthritis	3.77	5.3
6 Perinatal conditions	13.52	2.8	6 Cerebrovascular disease	3.46	4.9
7 Cerebrovascular disease	11.10	2.3	7 Chronic obstructive pulmonary disease	2.86	4.0
8 Schizophrenia	10.15	2.1	8 Diabetes mellitus	2.25	3.2
9 Alcohol use disorders	9.81	2.1	9 Endocrine disorders	1.68	2.4
10 Protein-energy malnutrition	9.34	2.0	10 Vision disorders, age-related	1.53	2.1

Source: Authors' calculations.

Table 3.13 The 10 Leading Causes of YLD by Sex, Worldwide, 2001

Males			Females		
Cause	YLD (millions of years)	Percentage of total YLD	Cause	YLD (millions of years)	Percentage of total YLD
1 Unipolar depressive disorders	20.35	7.7	1 Unipolar depressive disorders	31.26	11.0
2 Hearing loss, adult onset	14.96	5.6	2 Cataracts	16.49	5.8
3 Cataracts	12.16	4.6	3 Hearing loss, adult onset	15.03	5.3
4 Alcohol use disorders	11.50	4.3	4 Osteoarthritis	10.83	3.8
5 Cerebrovascular disease	7.58	2.9	5 Vision disorders, age-related	9.66	3.4
6 Vision disorders, age-related	7.23	2.7	6 Alzheimer's and other dementias	9.46	3.3
7 Perinatal conditions	7.03	2.7	7 Cerebrovascular disease	6.98	2.5
8 Osteoarthritis	6.59	2.5	8 Perinatal conditions	6.91	2.4
9 Chronic obstructive pulmonary disease	6.55	2.5	9 Schizophrenia	5.58	2.0
10 Schizophrenia	5.66	2.1	10 Bipolar disorder	4.82	1.7

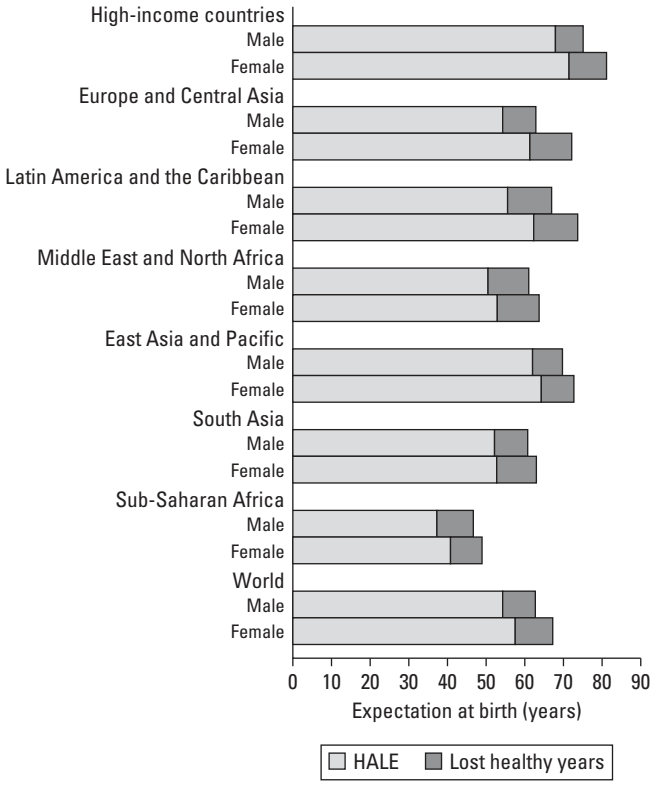
Source: Authors' calculations.

diseases, and long-term sequelae of communicable diseases and nutritional deficiencies. In other words, people living in developing countries not only face shorter life expectancies than those in developed countries, but also live a larger proportion of their lives in poor health.

Regional Variations in Healthy Life Expectancy

In the original GBD study, Murray and Lopez (1996c) computed a form of health expectancy referred to as disability-adjusted life expectancy using age- and sex-specific YLD rates and regional life tables to compute the expected equivalent years of healthy life in each region. Their results clearly demonstrated that populations with higher mortality also had higher prevalences of disability and lower health expectancies.

WHO has used a similar indicator, referred to as healthy life expectancy (HALE), to report on the average levels of population health for its 192 member countries (WHO 2004b). We calculated HALE at birth for regions in 2001 (figure 3.10) using the GBD 2001 estimates for YLD by region, age, and sex, together with information on health state prevalences and valuations from the WHO Multicountry Survey Study on Health and Responsiveness carried out in 2000 and 2001 (Ustun, Chatterji, Villanueva, and others 2003). For a description of the methods used to calculate HALE see Mathers, Salomon, and others (2003). Regional variations in HALE have also been discussed in more detail elsewhere, as have estimates of regional variations in increases in HALE associated with the elimination of selected health risks (Ezzati and others 2003; Mathers, Murray, and others 2003).



Source: Authors' calculations.

Figure 3.10 Life Expectancy, HALE, and Lost Healthy Years by Region and Sex, 2001

Overall, global HALE at birth in 2001 for males and females combined was 57.4 years, 7.5 years lower than total life expectancy at birth (figure 3.10). In other words, on average, poor health resulted in a loss of nearly eight years of healthy life globally. Global HALE at birth for females was only 2.7 years greater than that for males. In comparison, female life expectancy at birth was 4.2 years higher than that for males. Global HALE at age 60 was 12.7 years and 14.7 years for males and females, respectively, 4.3 years lower than total life expectancy at age 60 for males and 5.3 years lower for females.

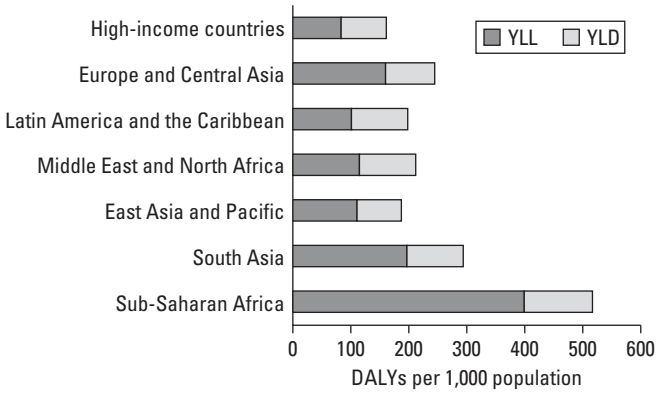
HALE at birth ranged from a low of 40 years for males in Sub-Saharan Africa to more than 70 years for females in high-income countries. This reflects an almost twofold difference in HALE between major regional populations (figure 3.10). The equivalent "lost" healthy years (total life expectancy minus HALE) ranged from 15 percent of total life expectancy at birth in Sub-Saharan Africa to 8 percent in high-income countries. The sex gap was highest for Europe and Central Asia and lowest in the Middle East and North Africa.

GLOBAL BURDEN OF DISEASE IN 2001

This section provides an overview of the global and regional burden of disease in 2001 as measured in DALYs, more specifically, in DALYs(3,0). As defined earlier, DALYs(3,0) do not apply nonuniform age weights, but incorporate a 3 percent discount rate and should be distinguished from the DALYs(3,1) used in the GBD results reported by WHO in recent world health reports. In 2001, the global average burden of disease across all regions was 250 DALYs(3,0) per 1,000 population, of which almost two-thirds were due to premature death.

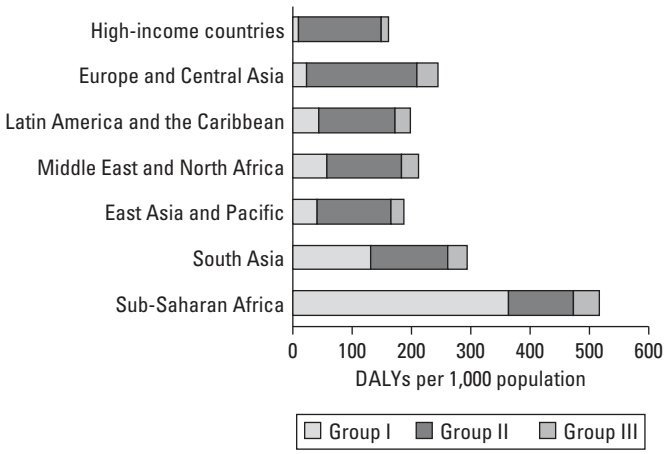
YLL varied dramatically across regions, with YLL rates nearly five times higher in Sub-Saharan Africa than in high-income countries (figure 3.11). In contrast, YLD rates were less varied, with Sub-Saharan Africa having 50 percent higher rates than high-income countries. South Asia and Sub-Saharan Africa together bore 45 percent of the total GBD in 2001, even though they account for only one-third of the world's population. East Asia and the Pacific is the "healthiest" of the low- and middle-income regions, with countries such as China now having life expectancies similar to those of many Latin American countries and higher than those in some European countries (see chapter 2).

Europe and Central Asia now experiences a higher burden of disease than all other low- and middle-income regions except South Asia and Sub-Saharan Africa. This reflects the sharp increase in adult male mortality and disability in the 1990s. A significant factor in this increase was the high incidence of male alcohol abuse, which led to high rates of accidents, violence, and CVD. From 1991 to 1994, the risk of premature death increased by 50 percent for Russian males (Gavrilova and others 2000; Semenova and



Source: Authors' calculations.

Figure 3.11 YLL, YLD, and DALYs by Region, 2001



Source: Authors' calculations.

Figure 3.12 Burden of Disease by Broad Cause Group and Region, 2001

others 2000; Shkolnikov, McKee, and Leon 2001). Between 1994 and 1998, life expectancy for males improved, but declined again significantly between 1998 and 2001 (Men and others 2003).

While countries in Europe and Central Asia have a substantially higher burden of noncommunicable disease than high-income countries (figure 3.12), they also have a higher burden due to Group I causes and Group III causes. Indeed, countries in Europe and Central Asia have the highest proportion of the burden due to injuries of all the regions, 14 percent, followed by the Middle East and North Africa.

Leading Causes of the Burden of Disease in 2001

The 20 leading causes of burden of disease for both sexes together are shown in table 3.14. While the two leading causes of death, IHD and cerebrovascular disease, remain among the top four causes of the burden of disease, four nonfatal conditions are also among the top 20 causes of burden: unipolar depressive disorders, adult-onset hearing loss, cataracts, and osteoarthritis. This once again illustrates the importance of taking nonfatal conditions into account, as well as deaths, when assessing the causes of loss of health in populations.

In 2001, the leading causes of the burden of disease in low- and middle-income countries were broadly similar to those for the world as a whole (table 3.15), and included six Group I causes among the top 10, but the leading causes in high- income countries consisted entirely of Group II conditions, including three (unipolar depressive disorders, adult-onset hearing loss, and alcohol use disorders) for which direct mortality is low.

Age and Sex Differences in the Burden of Disease

Measured in DALYs(3,0), children younger than 15 accounted for 36 percent of the world's total burden of disease and injury in 2001 and adults ages 15 to 59 accounted for almost 50 percent. Low- and middle-income countries accounted for the vast majority of the disease burden for children (figure 3.13). While the proportion of the total burden of disease borne by adults ages 15 to 59 was the same in both groups of countries, adults older than 60 accounted for a significantly larger share of the disease burden in high-income countries.

Although injuries become more important for boys beyond infancy, the causes of the burden of disease are broadly similar for boys and girls. However, striking gender differences emerge in adulthood. In low- and middle-income countries, 5 of the 10 leading causes of DALYs(3,0) for men ages 15 to 44 are injuries. Indeed, after HIV/AIDS, road traffic accidents were the second leading cause of the burden of disease for men in this age group. Other unintentional injuries and violence were the third and fourth

Table 3.14 The 20 Leading Causes of Global Burden of Disease, DALYs(3,0), 2001

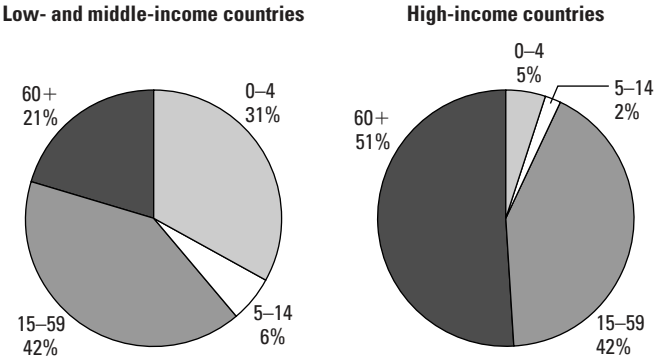
	Cause	DALYs (millions of years)	Percentage of total DALYs (3,0)		Cause	DALYs (millions of years)	Percentage of total DALYs (3,0)
1	Perinatal conditions	90.48	5.9	11	Road traffic accidents	35.06	2.3
2	Lower respiratory infections	85.92	5.6	12	Hearing loss, adult onset	29.99	2.0
3	Ischemic heart disease	84.27	5.5	13	Cataracts	28.64	1.9
4	Cerebrovascular disease	72.02	4.7	14	Congenital anomalies	24.95	1.6
5	HIV/AIDS	71.46	4.7	15	Measles	23.11	1.5
6	Diarrheal diseases	59.14	3.9	16	Self-inflicted injuries	20.26	1.3
7	Unipolar depressive disorders	51.84	3.4	17	Diabetes mellitus	20.00	1.3
8	Malaria	39.97	2.6	18	Violence	18.90	1.2
9	Chronic obstructive pulmonary disease	38.74	2.5	19	Osteoarthritis	17.45	1.1
10	Tuberculosis	36.09	2.3	20	Alzheimer's and other dementias	17.11	1.1

Source: Authors' calculations.

Table 3.15 The 10 Leading Causes of Burden of Disease, by Broad Income Group, 2001

Low- and middle-income countries			High-income countries		
	Cause	DALYs (millions of years)	Percentage of total DALYs(3,0)	Cause	DALYs (millions of years)	Percentage of total DALYs(3,0)
1	Perinatal conditions	89.07	6.4	Ischemic heart disease	12.39	8.3
2	Lower respiratory infections	83.61	6.0	Cerebrovascular disease	9.35	6.3
3	Ischemic heart disease	71.88	5.2	Unipolar depressive disorders	8.41	5.6
4	HIV/AIDS	70.80	5.1	Alzheimer's and other dementias	7.47	5.0
5	Cerebrovascular disease	62.67	4.5	Trachea, bronchus, and lung cancers	5.40	3.6
6	Diarrheal diseases	58.70	4.2	Hearing loss, adult onset	5.39	3.6
7	Unipolar depressive disorders	43.43	3.1	Chronic obstructive pulmonary disease	5.28	3.5
8	Malaria	39.96	2.9	Diabetes mellitus	4.19	2.8
9	Tuberculosis	35.87	2.6	Alcohol use disorders	4.17	2.8
10	Chronic obstructive pulmonary disease	33.45	2.4	Osteoarthritis	3.79	2.5

Source: Authors' calculations.



Source: Authors' calculations.
Note: The disease burden is measured in DALYs.

Figure 3.13 Age Distribution of Burden of Disease by Income Group, 2001

leading causes, with self-inflicted injuries and war also appearing in the top 10 causes. Injuries were also important for women ages 15 to 44, although road traffic accidents were the 10th leading cause, preceded by other unintentional injuries in 4th place and self-inflicted injuries in 6th place. Unipolar depressive disorders were the second leading cause of the burden for women in this age group, after HIV/AIDS.

The Growing Burden of Noncommunicable Diseases

The burden of noncommunicable diseases is increasing, accounting for nearly half the global burden of disease for all ages, a 10 percent increase from estimated levels in 1990. While the proportion of the burden from noncommunicable disease in high-income countries has remained stable at around 85 percent in adults ages 15 and older, the proportion in middle-income countries has already exceeded 70 percent. Surprisingly, almost 50 percent of the adult disease burden in low- and middle-income countries is now attributable to noncommunicable disease. Population aging and changes in the distribution of risk factors have accelerated the epidemic of noncommunicable disease in many developing countries.

CVD accounted for 13 percent of the disease burden among adults ages 15 and older in 2001. IHD and cerebrovascular disease (stroke) were the two leading causes of mortality and the disease burden among adults ages 60 and older and were also among the top 10 causes of the disease burden in adults ages 15 to 59. In low- and middle income countries, IHD and cerebrovascular disease (stroke) were together responsible for 15 percent of the disease burden in those ages 15 and older, and DALYs(3,0) rates were higher for men than for women.

The proportion of the burden among adults ages 15 and older attributable to cancer was 6 percent in low- and middle income countries and 14 percent in high-income countries in 2001. Of the 7.1 million cancer deaths estimated to have occurred in that year, 17 percent, or 1.2 million, were attributable to lung cancer alone, and of these, three-quarters occurred among men. The number of cases of lung cancer increased nearly 30 percent since 1990, largely reflecting the emergence of the tobacco epidemic in low- and middle-income countries.

Stomach cancer, which until recently was the leading site of cancer mortality worldwide, has been declining in all parts of the world where trends can be reliably assessed, and in 2001 caused 842,000 deaths, or about two-thirds as many as lung cancer. Liver cancer was the third leading site, with

607,000 deaths in 2001, more than 60 percent of them in the East Asia and Pacific region. Among women, the leading cause of cancer deaths was breast cancer. Breast cancer survival rates have been improving during the past decade, but the chance of survival varies according to the coverage of and access to secondary prevention. Globally, neuropsychiatric conditions accounted for 19 percent of the disease burden among adults, primarily from nonfatal health outcomes.

Injuries: The Hidden Epidemic

Injuries, both unintentional and intentional, primarily affect young adults, and often result in severe, disabling sequelae. In 2001, injuries accounted for 16 percent of the adult burden of ill-health and premature death worldwide. In parts of Europe and Central Asia, Latin America and the Caribbean, and the Middle East and North Africa, more than 30 percent of the entire disease and injury burden among male adults ages 15 to 44 was attributable to injuries, and road traffic accidents, violence, and self-inflicted injuries were all among the top 10 leading causes of the burden of disease. Globally, road traffic accidents were the third leading cause of burden in the same age and sex group, preceded only by HIV/AIDS and unipolar depression. The burden of road traffic accidents has been increasing, especially in the developing countries of Sub-Saharan Africa and South and Southeast Asia, and particularly affects males.

Intentional injuries, which include self-inflicted injuries and suicide, violence, and war, accounted for an increasing share of the burden, especially among economically productive young adults. In developed countries, suicides accounted for the largest share of the intentional injury burden, whereas in developing regions, violence and war were the major sources. The former Soviet Union and other high-mortality countries of Eastern Europe have rates of death and disability resulting from injury among males that are similar to those in Sub-Saharan Africa.

Regional Variations in the Burden of Disease

The tables in annex 3C show estimated total DALYs(3,0) by age, sex, and cause in 2001 for each region and for the world as a whole. Table 3.16 summarizes the 10 leading causes of burden for each of the low- and middle-income regions.

In 2001, IHD and stroke dominated the burden of disease in Europe and Central Asia, and together accounted for more than a quarter of the total disease burden. In contrast, in Latin America and the Caribbean, these diseases accounted for 8 percent of disease burden. However, this region also had high levels of diabetes and endocrine disorders compared with other regions. Violence was the third leading cause of burden in Latin America and Caribbean countries, but did not reach the top 10 in any other region.

HIV/AIDS was the leading cause of the burden of disease in Sub-Saharan Africa, followed by malaria. Seven other Group I causes also appear in the top 10 causes for this region, with road traffic accidents being the only non-Group I cause.

Group I, II, and III causes all appear among the top 10 causes of the disease burden for the Middle East and North Africa. Of particular note, road traffic accidents were the third leading cause and congenital anomalies were the seventh leading cause.

Group I causes of the disease burden remained dominant in South Asia, and this burden fell particularly on children, but noncommunicable diseases such as IHD, stroke, and chronic obstructive pulmonary disease also featured in the list of top 10 causes.

In East Asia and the Pacific, stroke was the leading cause of disease burden in 2001, with IHD in fourth place, although Group I causes such as conditions arising during the perinatal period, TB, lower respiratory infections, and diarrheal diseases remained important.

DISCUSSION AND CONCLUSIONS

The analysis presented in this chapter has confirmed some of the conclusions of the original GBD study about the importance of including nonfatal outcomes in a comprehensive assessment of global population health, and has also confirmed the growing importance of noncommunicable diseases in low- and middle-income countries. However, it has also documented dramatic changes in population health in some regions since 1990. The key findings include the following:

- HIV/AIDS is now the fourth leading cause of the burden of disease globally and the leading cause in Sub-Saharan Africa.
- In low- and middle-income countries, the epidemiological transition has resulted in a 20 percent reduction in the per capita disease burden due to Group I causes since 1990. Without the HIV/AIDS epidemic, this reduction would have been closer to 30 percent. Several of the "traditional" infectious diseases, such as TB and malaria, have not declined, in part because of weak public health services and the increased numbers of people with immune systems weakened by HIV/AIDS.

Table 3.16 The 10 Leading Causes of the Burden of Disease in Low- and Middle-Income Countries, by Region, 2001

	East Asia and Pacific	Percentage of total DALYs(3,0)		Europe and Central Asia	Percentage of total DALYs(3,0)
1	Cerebrovascular disease	7.5	1	Ischemic heart disease	15.9
2	Perinatal conditions	5.4	2	Cerebrovascular disease	10.8
3	Chronic obstructive pulmonary disease	5.0	3	Unipolar depressive disorders	3.7
4	Ischemic heart disease	4.1	4	Self-inflicted injuries	2.3
5	Unipolar depressive disorders	4.1	5	Hearing loss, adult onset	2.2
6	Tuberculosis	3.1	6	Chronic obstructive pulmonary disease	2.0
7	Lower respiratory infections	3.1	7	Trachea, bronchus, and lung cancers	2.0
8	Road traffic accidents	3.0	8	Osteoarthritis	2.0
9	Cataracts	2.8	9	Road traffic accidents	1.9
10	Diarrheal diseases	2.5	10	Poisonings	1.9

	Latin America and the Caribbean	Percentage of total DALYs(3,0)		Middle East and North Africa	Percentage of total DALYs(3,0)
1	Perinatal conditions	6.0	1	Ischemic heart disease	6.6
2	Unipolar depressive disorders	5.0	2	Perinatal conditions	6.3
3	Violence	4.9	3	Road traffic accidents	4.6
4	Ischemic heart disease	4.2	4	Lower respiratory infections	4.5
5	Cerebrovascular disease	3.8	5	Diarrheal diseases	3.9
6	Endocrine disorders	3.0	6	Unipolar depressive disorders	3.1
7	Lower respiratory infections	2.9	7	Congenital anomalies	3.1
8	Alcohol use disorders	2.8	8	Cerebrovascular disease	3.0
9	Diabetes mellitus	2.7	9	Vision disorders, age-related	2.7
10	Road traffic accidents	2.6	10	Cataracts	2.3

	South Asia	Percentage of total DALYs(3,0)		Sub-Saharan Africa	Percentage of total DALYs(3,0)
1	Perinatal conditions	9.2	1	HIV/AIDS	16.5
2	Lower respiratory infections	8.4	2	Malaria	10.3
3	Ischemic heart disease	6.3	3	Lower respiratory infections	8.8
4	Diarrheal diseases	5.4	4	Diarrheal diseases	6.4
5	Unipolar depressive disorders	3.6	5	Perinatal conditions	5.8
6	Tuberculosis	3.4	6	Measles	3.9
7	Cerebrovascular disease	3.2	7	Tuberculosis	2.3
8	Cataracts	2.3	8	Road traffic accidents	1.8
9	Chronic obstructive pulmonary disease	2.3	9	Pertussis	1.8
10	Hearing loss, adult onset	2.0	10	Protein-energy malnutrition	1.5

Source: Authors' calculations.

- The per capita disease burden in Europe and Central Asia increased by nearly 40 percent during 1990–2001, meaning that this region now has worse health than all other regions except South Asia and Sub-Saharan Africa. The unexpected increase in the disease burden, and the concomitant reduction in life expectancy, in countries of this region appear to be related to such factors as alcohol abuse, suicide, and violence, which seem to be associated with societies facing dramatic social and economic changes. The rapidity of these declines has dramatically changed our perceptions of the time frames within which substantial changes in the burden of chronic disease can occur and of the potential for such adverse health trends to occur elsewhere.
- Adults under the age of 70 in low- and middle-income countries face a greater risk of death from noncommunicable diseases than adults of the same age in high-income countries.
- In Europe and Central Asia, Latin America and the Caribbean, and the Middle East and North Africa, more than 30 percent of the entire disease burden among male adults ages 15 to 44 is attributable to injuries, including road traffic accidents, violence, and self-inflicted injuries. In addition, injury deaths are noticeably higher for women in some parts of Asia and the Middle East and North Africa than in other regions, partly because of high levels of suicide and violence. Combined with higher rates of infant and child mortality for girls,

this results in a narrower differential between male and female healthy life expectancy than in any other region.
- Sense organ disorders, principally hearing and sight loss, contribute significantly to disability in all regions of the world.
- Levels of nonfatal health loss are proportionately greater in low- and middle-income countries than in high-income countries, contrary to the perception that disability is associated with older populations. The gap between healthy life expectancy and total life expectancy is proportionately highest for the low-income countries.

The analysis presented in this chapter has aimed to produce a comprehensive and detailed assessment of the global burden of disease, based on all available relevant data. It has attempted to maximize the use of high-quality, population-based data, and for regions and causes for which data are sparse has used the available evidence and the best available methods to make inferences and to assess the uncertainty in resulting estimates (see chapter 5). The need for internal consistency between estimates of incidence, prevalence, case fatality rates, and mortality rates for a given disease and for consistency across diseases and injuries with known total levels of mortality are crucial strategies for making the best use of multiple sources of uncertain and potentially biased data.

The data inputs used for the GBD 2001 estimation of global and regional causes of death have been summarized in tables 3.1, 3.2, and 3.5. In excess of 770 country-years of death registration data and more than 3,000 additional sources of information on levels of child and adult mortality and on specific causes of death were used to estimate global and regional patterns of mortality. Together with the more than 8,500 data sources used for the estimation of YLD, the GBD 2001 has incorporated information from more than 10,000 data sets relating to population health and mortality. This represents the largest synthesis of global information on population health carried out to date.

Despite the perceptions of some critics that the GBD study is inadequately empirically based for some regions, particularly Sub-Saharan Africa (Cooper and others 1998), it is notable that fully one-third of the more than 10,000 data sources used relate to Sub-Saharan African populations, albeit with the serious limitations on the information available on mortality noted earlier. We believe that the GBD studies have demonstrated the importance of including assessments of all causes of the disease and injury burden, even in the face of limited or missing data, to ensure that a comprehensive overview is provided to gain a better understanding of the importance of specific diseases and risk factors in causing loss of health. Otherwise, limitations in the evidence base for certain causes or regions might lead to their omission, and hence to the conclusion that they cause no burden, thereby presenting health decision makers with a misleading picture.

Nevertheless, the fact that estimates are possible does not obviate the need to put a higher priority on addressing the serious lack of information on levels of adult mortality and causes of death in some regions, particularly Sub-Saharan Africa. The key need for countries is to establish a system that registers the most common causes of death for the entire population without serious biases (such as an emphasis on urban mortality), in which there is reasonable confidence, and which yields timely data. Complete VR with annual population updates is the ideal system to generate this information, but it is not essential. Recent experience in countries such as China, India, and Tanzania suggests that sample registration based on a representative set of surveillance sites, and with appropriate controls and reporting procedures, can yield extremely useful information about levels, patterns, and causes of mortality for large populations (Setel and others 2005; Yang and others 2005). Low- and middle-income countries can benefit from the advantages of death registration without implementing a system of complete population coverage and medical certification (Rao, Bradshaw, and Mathers 2004). To support such systems, priority needs to be given to developing a standardized reporting form for verbal autopsies and to implementing validation studies to assess the reliability and accuracy of verbal autopsy methods.

Improved verbal autopsy methods will also contribute to improving the accuracy of estimates of the causes of child deaths under five, the majority of which occur in countries without useable death registration data. As discussed in chapters 5 and 6, new data and syntheses for major causes of child death may result in future revisions to the estimates of child deaths for certain causes.

There is also a lack of good population-based epidemiological data for developing regions, particularly for noncommunicable diseases. For example, even though IHD and stroke are among the leading causes of the burden of disease in most regions, few recent and reliable sources of information on the prevalence and severity distribution of chronic cardiovascular conditions and long-term disability following stroke are available outside the high-income countries. Similarly, even in high-income countries, few population-based studies of the prevalence of chronic lung disease or musculoskeletal conditions have been carried out.

Cross-national surveys, such as WHO's World Health Survey conducted during 2002 and 2003 in 73 countries, will fill some information gaps for some chronic diseases and mental disorders (Ustun, Chatterji, Mechbal, and others 2003). However, there remain significant issues that will need to be addressed relating to the comparability of prevalence data derived from self-reported survey data on symptoms of mental disorders, angina, and other chronic diseases.

Lack of information has resulted in limitations in the disease models used to estimate the burden of disease for some causes. Future iterations of burden of disease analysis will need to review disease models and sequelae chosen for estimating YLD to ensure that the best available estimates of the disease burden for each cause continue to remain based on current knowledge and data.

A particular difficulty is how to measure and characterize the average health states associated with sequelae. This is partly an issue of valuation of health states for the construction of disability weights, and partly an issue of lack of information on the population-level distribution of outcomes and the severity of health states. To a large extent, the disability weights used here derive from the original GBD study (Murray 1996), where typically an average disability weight was estimated for disease sequelae averaged across the distribution of outcomes, in some cases separately for treated and untreated cases. Stouthard and others (1997) have gone further in assessing disability weights for a range of severity levels of outcomes for a particular sequela, thereby allowing the overall final disability weight for a sequela to take account of regional variations in the severity distribution of outcomes.

The 2001 WHO Multicountry Survey Study collected health state valuation data on more than 500,000 health states from respondents in 71 countries, which Salomon and Murray (2004) used to construct a health state valuation function. The World Health Survey also included a health state valuation module, and analysis of the resulting data is under way (Salomon, Murray, and others 2003). In the next iteration of burden of disease analysis, it should be feasible to use health state valuations based on such survey data, together with descriptions of outcomes associated with disease sequelae, to produce updated disability weights that take into account not only the available information on health state distributions for disease sequelae, but also the health state preferences of people from all regions. A particular issue is the measurement of disability weights for low severity but highly prevalent conditions, such as anemia and hearing loss, where the current disability weights are small but quite uncertain and are multiplied by large prevalences (see chapter 5).

Burden of disease analysis provides a comprehensive, comparative overview of the state of population health and the factors affecting the health of populations. The 2001 GBD study is an expanded effort compared with the original 1990 study, with the incorporation of much new data and a greater understanding of the limitations of routinely available data sets. Nevertheless, substantial uncertainty remains about the comparative burden of diseases and injuries in many parts of the world that has significantly greater consequences for policy than the inclusion or otherwise of social choices such as age weighting in the basic burden of disease metric. We can conclude with some certainty that major causes of death and disability, such as tobacco and HIV/AIDS, are global pandemics and are likely to become more widespread unless control programs are more widely implemented. However, we remain substantially uncertain about the true levels of the disease burden from chronic lung disease, heart disease, stroke, mental disorders, various forms of injury, and a number of other key health concerns. International health agencies such as WHO and public health and epidemiological researchers need to make a concerted effort to improve data collection, and hence knowledge, about the true extent of the disease burden worldwide. Even efforts that substantially reduce uncertainty will be a major advance toward this goal.

With rising pressure on resources for health in all countries, priority setting in the health sector will increasingly depend on comprehensive, comparative information about the impact of diseases, injuries, and risk factors on population health. The burden of disease framework, with 15 years of development and application in numerous countries across the globe, offers the best, indeed the only, approach to comprehensively assess the impact of conditions and exposures that health systems need to deal with if population health is to improve rapidly. Yet to be even more useful for setting and monitoring global health priorities, a more concerted effort is needed to obtain and critically assess data sets on the health of populations in all countries. This must be a key focus of future efforts to assess the burden of disease. With WHO now giving greater emphasis to working with countries on capacity building and on specific organizational intervention priorities, new global partners such as the Ellison Institute for Global Health (Horton 2005) are urgently required to provide stewardship and guarantee that the evidence base for health policy and priority setting will develop at a pace commensurate with need.

ANNEX 3A: Definitions, Mortality Data Sources, and Disability Weights

Table 3A.1 Regional Reporting Categories for the Disease Control Priorities Project

Region	Countries included
East Asia and Pacific	American Samoa, Cambodia, China, Fiji, Indonesia, Kiribati, Democratic People's Republic of Korea, Lao People's Democratic Republic, Malaysia, Marshall Islands, Federated States of Micronesia, Mongolia, Myanmar, Palau, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Timor-Leste, Tonga, Vanuatu, Vietnam
Europe and Central Asia	Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Isle of Man, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, the former Yugoslav Republic of Macedonia, Moldova, Poland, Romania, Russian Federation, Serbia and Montenegro, Slovak Republic, Tajikistan, Turkey, Turkmenistan, Ukraine, Uzbekistan
High-income countries	Andorra, Aruba, Australia, Austria, The Bahamas, Bahrain, Belgium, Bermuda, Brunei Darussalam, Canada, Cayman Islands, Channel Islands, Cyprus, Denmark, Faeroe Islands, Finland, France, French Polynesia, Germany, Greece, Greenland, Guam, Iceland, Ireland, Israel, Italy, Japan, Kuwait, Liechtenstein, Luxembourg, Monaco, the Netherlands, Netherlands Antilles, New Caledonia, New Zealand, Northern Mariana Islands, Norway, Portugal, Qatar, Republic of Korea, San Marino, Singapore, Slovenia, Spain, Sweden, Switzerland, United Arab Emirates, United Kingdom, United States, U.S. Virgin Islands
Latin America and the Caribbean	Antigua and Barbuda, Argentina, Barbados, Belize, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Puerto Rico, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, República Bolivariana de Venezuela
Middle East and North Africa	Algeria, Djibouti, Arab Republic of Egypt, Islamic Republic of Iran, Iraq, Jordan, Lebanon, Libya, Malta, Morocco, Oman, Saudi Arabia, Syrian Arab Republic, Tunisia, West Bank and Gaza, Republic of Yemen
South Asia	Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, Sri Lanka
Sub-Saharan Africa	Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Rwanda, São Tomé and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan, Swaziland, Tanzania, Togo, Uganda, Zambia, Zimbabwe
Other	Anguilla, British Virgin Islands, Cook Islands, Falkland Islands, French Guiana, Gibraltar, Guadeloupe, Holy See (Vatican City), Martinique, Montserrat, Nauru, Niue, Pitcairn, Réunion, St. Helena, St. Pierre et Miquelon, Tokelau, Turks and Caicos Islands, Tuvalu, Wallis and Futuna Islands, Western Sahara

Source: Jamison and others 2006.

Table 3A.2 GBD Cause Categories and ICD Codes

Code	GBD cause name	ICD-9 code	ICD-10 code
U000	**All causes**		
U001	**I. Communicable, maternal, perinatal, and nutritional conditions**[a]	001–139, 243, 260– 269,*279.5,* 280–281, 285.9, 320–323, 381–382,460–465, 466, 480–487, 614–616, 630–676, 760–779	A00–B99, G00–G04, N70–N73, J00–J06, J10–J18, J20–J22, H65–H66, O00–O99, P00–P96, E00–E02, E40–E46, E50, D50–D53, D64.9, E51–64
U002	**A. Infectious and parasitic diseases**	001–139, *279.5,* 320–323, 614–616, 771.3	A00–B99, G00, G03–G04, N70–N73
U003	1. **Tuberculosis**	010–018, 137	A15–A19, B90
U004	2. **Sexually transmitted diseases excluding HIV/AIDS**	090–099, 614–616	A50–A64, N70–N73
U005	a. Syphilis	090–097	A50–A53
U006	b. Chlamydia	—	A55–A56
U007	c. Gonorrhea	098	A54
U008	d. Other sexually transmitted diseases	099, 614–616	A57–A64, N70–N73
U009	3. **HIV/AIDS**	279.5 (=042–044)	B20–B24
U010	4. **Diarrheal diseases**	001, 002, 004, 006–009	A00, A01, A03, A04, A06–A09
U011	5. **Childhood-cluster diseases**	032, 033, 037, 045, 055, 138, 771.3	A33–A37, A80, B05, B91
U012	a. Pertussis	033	A37
U013	b. Poliomyelitis	045, 138	A80, B91
U014	c. Diphtheria	032	A36
U015	d. Measles	055	B05
U016	e. Tetanus	037, 771.3	A33–A35
U017	6. **Meningitis**	036, 320–322	A39, G00, G03
U018	7. **Hepatitis B**	070.2–070.9	B16–B19 (minus B17.1, B18.2)
U019	**Hepatitis C**	—	B17.1, B18.2
U020	8. **Malaria**	084	B50–B54
U021	9. **Tropical-cluster diseases**	085, 086, 120, 125.0, 125.1, 125.3	B55–B57, B65, B73, B74.0–B74.2
U022	a. Trypanosomiasis	086.3, 086.4, 086.5,	B56
U023	b. Chagas' disease	086.0, 086.1, 086.2, 086.9	B57
U024	c. Schistosomiasis	120	B65
U025	d. Leishmaniasis	085	B55
U026	e. Lymphatic filariasis	125.0, 125.1	B74.0–B74.2
U027	f. Onchocerciasis	125.3	B73
U028	10. **Leprosy**	030	A30
U029	11. **Dengue**	061	A90–A91
U030	12. **Japanese encephalitis**	062.0	A83.0
U031	13. **Trachoma**	076	A71
U032	14. **Intestinal nematode infections**	126–129	B76–B81
U033	a. Ascariasis	127.0	B77
U034	b. Trichuriasis	127.3	B79
U035	c. Hookworm disease (Ancylostomiasis and necatoriasis)	126	B76
U036	Other intestinal infections	127.1, 127.2, 127.4–127.9, 128, 129	B78, B80, B81

(Continues on the following page.)

Table 3A.2 Continued

Code	GBD cause name	ICD-9 code	ICD-10 code
U037	Other infectious diseases	003, 005, 020–027, 031, 034, 035, 038–041, 046–049, 050–054, 056–057, 060, 062.1–066, 070.0–070.1, 071–075, 077–079, 080–083, 087–088, 100–104, 110–118, 121–124, 125.2, 125.4, 125.5, 125.6, 125.7, 125.9, 130–136, 139, 323	A02, A05, A20–A28, A31, A32, A38, A40–A49, A65–A70, A74–A79, A81, A82, A83.1–A83.9, A84–A89, A92–A99, B00–B04, B06–B15, B25–B49, B58–B60, B64, B66–B72, B74.3–B74.9, B75, B82–B89, B92–B99, G04
U038	**B. Respiratory infections**	460–466, 480–487, 381–382	J00–J06, J10–J18, J20–J22, H65–H66
U039	1. Lower respiratory infections	466, 480–487	J10–J18, J20–J22
U040	2. Upper respiratory infections	460–465	J00–J06
U041	3. Otitis media	381–382	H65–H66
U042	**C. Maternal conditions**	630–676	O00–O99
U043	1. Maternal hemorrhage	640, 641, 666	O44–O46, O67, O72
U044	2. Maternal sepsis	670	O85–O86
U045	3. Hypertensive disorders of pregnancy	642	O10–O16
U046	4. Obstructed labor	660	O64–O66
U047	5. Abortion	630–639	O00–O07
U048	Other maternal conditions	643–659, 661–665, 667–669, 671–676	O20–O43, O47–O63, O68–O71, O73–O75, O87–O99
U049	**D. Conditions arising during the perinatal period**	760–779 (minus 771.3)	P00–P96
U050	1. Low birthweight	764–765	P05–P07
U051	2. Birth asphyxia and birth trauma	767–770	P03, P10–P15, P20–P29
U052	Other perinatal conditions	760–763, 766, 771 (minus 771.3), 772–779	P00–P02, P04, P08, P35–P96
U053	**E. Nutritional deficiencies**	243, 260–269, 280–281, 285.9	E00–E02, E40–E46, E50, D50–D53, D64.9, E51–E64
U054	1. Protein-energy malnutrition	260–263	E40–E46
U055	2. Iodine deficiency	243	E00–E02
U056	3. Vitamin A deficiency	264	E50
U057	4. Iron-deficiency anemia	280, 285.9	D50, D64.9
U058	Other nutritional disorders	265–269, 281	D51–D53, E51–E64
U059	**II. Noncommunicable diseases**[a]	140–242, 244–259, 270–279 (minus 279.5), 282–285 (minus 285.9), 286–319, 324–380, 383–459, 470–478, 490–611, 617–629, 680–759	C00–C97, D00–D48, D55–D64 (minus D 64.9) D65–D89, E03–E07, E10–E16, E20–E34, E65–E88, F01–F99, G06–G98, H00–H61, H68–H93, I00–I99, J30–J98, K00–K92, N00–N64, N75–N98, L00–L98, M00–M99, Q00–Q99
U060	**A. Malignant neoplasms**	140–208	C00–C97
U061	1. Mouth and oropharynx cancers[b]	140–149	C00–C14
U062	2. Esophageal cancer[b]	150	C15
U063	3. Stomach cancer[b]	151	C16
U064	4. Colon and rectal cancers[b]	153–154	C18–C21
U065	5. Liver cancer	155	C22
U066	6. Pancreas cancer	157	C25
U067	7. Trachea, bronchus, and lung cancers	162	C33–C34
U068	8. Melanoma and other skin cancers[b]	172–173	C43–C44
U069	9. Breast cancer[b]	174–175	C50
U070	10. Cervix uteri cancer[b]	180	C53

Table 3A.2 Continued

Code	GBD cause name	ICD-9 code	ICD-10 code
U071	11. Corpus uteri cancer[b]	179, 182	C54–C55
U072	12. Ovarian cancer	183	C56
U073	13. Prostate cancer[b]	185	C61
U074	14. Bladder cancer[b]	188	C67
U075	15. Lymphomas and multiple myeloma[b]	200–203	C81–C90, C96
U076	16. Leukemia[b]	204–208	C91–C95
U077	Other malignant neoplasms[b]	152, 156, 158–161, 163–171, 181, 184, 186–187, 189–199	C17, C23, C24, C26–C32, C37–C41, C45–C49, C51, C52, C57–C60, C62–C66, C68–C80, C97
U078	**B. Other neoplasms**	210–239	D00–D48
U079	**C. Diabetes mellitus**	250	E10–E14
U080	**D. Endocrine disorders**	240–242, 244–246, 251–259, 270–279 (minus 274, 279.5), 282–285 (minus 285.9), 286–289	D55–D64 (minus D64.9), D65–D89, E03–E07, E15–E16, E20–E34, E65–E88
U081	**E. Neuropsychiatric conditions**	290–319, 324–359	F01–F99, G06–G98
U082	1. Unipolar depressive disorders	296.1, 311	F32–F33
U083	2. Bipolar affective disorder	296 (minus 296.1)	F30–F31
U084	3. Schizophrenia	295	F20–F29
U085	4. Epilepsy	345	G40–G41
U086	5. Alcohol use disorders	291, 303, 305.0	F10
U087	6. Alzheimer's disease and other dementias	290, 330, 331	F01, F03, G30–G31
U088	7. Parkinson's disease	332	G20–G21
U089	8. Multiple sclerosis	340	G35
U090	9. Drug use disorders	304, 305.2–305.9	F11–F16, F18–F19
U091	10. Post-traumatic stress disorder	308–309	F43.1
U092	11. Obsessive-compulsive disorder	300.3	F42
U093	12. Panic disorder	300.2	F40.0, F41.0
U094	13. Insomnia (primary)	307.4	F51
U095	14. Migraine	346	G43
U096	15. Mental retardation, lead-caused	317–319	F70–F79
U097	Other neuropsychiatric disorders	292–294, 297–300.1, 300.4–302, 305.1, 306–307 (minus 307.4), 310, 312–316, 324–326, 333–337, 341–344, 347–349, 350–359	F04–F09, F17, F34–F39, F401–F409, F411–F419, F43 (minus F43.1), F44–F50, F52–F69, F80–F99, G06–G12, G23–G25, G36, G37, G44–G98
U098	**F. Sense organ diseases**	360–380, 383–389	H00–H61, H68–H93
U099	1. Glaucoma	365	H40
U100	2. Cataracts	366	H25–H26
U101	3. Vision disorders, age-related	367.4	H524
U102	4. Hearing loss, adult onset	389	H90–H91
U103	Other sense organ disorders	360–364, 367–380 (minus 367.4), 383–388	H00–H21, H27–H35, H43–H61 (minus H524), H68–H83, H92–H93
U104	**G. Cardiovascular diseases**	390–459	I00–I99
U105	1. Rheumatic heart disease	390–398	I01–I09
U106	2. Hypertensive heart disease	401–405	I10–I13
U107	3. Ischemic heart disease[c]	410–414	I20–I25
U108	4. Cerebrovascular disease	430–438	I60–I69
U109	5. Inflammatory heart diseases	420, 421, 422, 425	I30–I33, I38, I40, I42

(Continues on the following page.)

Table 3A.2 Continued

Code	GBD cause name	ICD-9 code	ICD-10 code
U110	Other cardiovascular diseases[c]	415–417, 423–424, 426–429, 440–448, 451–459	I00, I26–I28, I34–I37, I44–I51, I70–I99
U111	**H. Respiratory diseases**	470–478, 490–519	J30–J98
U112	1. Chronic obstructive pulmonary disease	490–492, 495–496	J40–J44
U113	2. Asthma	493	J45–J46
U114	Other respiratory diseases	470–478, 494, 500–508, 510–519	J30–J39, J47–J98
U115	**I. Digestive diseases**	530–579	K20–*K92*
U116	1. Peptic ulcer disease	531–533	K25–K27
U117	2. Cirrhosis of the liver	571	K70, K74
U118	3. Appendicitis	540–543	K35–K37
U119	Other digestive diseases	530, 534–537, 550–553, 555–558, 560–570, 572–579	K20–K22, K28–K31, K38, K40–K66, K71–K73, K75–K92
U120	**J. Genitourinary diseases**	580–611, 617–629	N00–N64, N75–N98
U121	1. Nephritis and nephrosis	580–589	N00–N19
U122	2. Benign prostatic hypertrophy	600	N40
U123	Other genitourinary system diseases	590–599, 601–611, 617–629	N20–N39, N41–N64, N75–N98
U124	**K. Skin diseases**	680–709	L00–L98
U125	**L. Musculoskeletal diseases**	710–739, 274	M00–M99
U126	1. Rheumatoid arthritis	714	M05–M06
U127	2. Osteoarthritis	715	M15–M19
U128	3. Gout	274	M10
U129	4. Low back pain	720–724 (minus 721.1, 722.0, 722.4)	M45–M48, M54 (minus M54.2)
U130	Other musculoskeletal disorders	710–713, 716–719, 721.1, 722.0, 722.4, 723, 725–739	M00–M02, M08, M11–M13, M20–M43, M50–M53, M54.2, M55–M99
U131	**M. Congenital anomalies**	740–759	Q00–Q99
U132	1. Abdominal wall defect	756.7	Q79.2–Q79.5
U133	2. Anencephaly	740.0	Q00
U134	3. Anorectal atresia	751.2	Q42
U135	4. Cleft lip	749.1	Q36
U136	5. Cleft palate	749.0	Q35, Q37
U137	6. Esophageal atresia	750.3	Q39.0–Q39.1
U138	7. Renal agenesis	753.0	Q60
U139	8. Down syndrome	758.0	Q90
U140	9. Congenital heart anomalies	745–747	Q20–Q28
U141	10. Spina bifida	741	Q05
U142	Other congenital anomalies	740.1, 740.2, 742–744, 748, 749.2, 750.0, 750.1, 750.2, 750.4–751.1, 751.3–751.9, 752, 753.1–753.9, 754, 755, 756.0–756.6, 756.8, 756.9, 757, 758.1–758.9, 759	Q01–Q04, Q06–Q18, Q30–Q34, Q38, Q392–Q399, Q40–Q41, Q43–Q56, Q61–Q78, Q790, Q791, Q796, Q798, Q799, Q80–Q89, Q91–Q99
U143	**N. Oral conditions**	520–529	K00–K14
U144	1. Dental caries	521.0	K02
U145	2. Periodontal disease	523	K05
U146	3. Edentulism	—	—
U147	Other oral diseases	520, 521.1–521.9, 522, 524–529	K00, K01, K03, K04, K06–K14

Table 3A.2 Continued

Code	GBD Cause Name	ICD-9 code	ICD-10 code
U148	**III. Injuries**	E800–999	V01–Y89
U149	**A. Unintentional injuries**[d]	E800–949	V01–X59, Y40–Y86, Y88, Y89
U150	1. Road traffic accidents	E810–819, E826–829, E929.0	[e]
U151	2. Poisonings	E850–869	X40–X49
U152	3. Falls	E880–888	W00–W19
U153	4. Fires	E890–899	X00–X09
U154	5. Drownings	E910	W65–W74
U155	6. Other unintentional injuries	E800–E807, E820–E848, E870–E879, E900–E909, E911–E949	Rest of V, W20–W64, W75–W99, X10–X39, X50–X59, Y40–Y86, Y88, Y89
U156	**B. Intentional injuries**[d]	E950–978, 990–999	X60–Y09, Y35–Y36, Y870, Y871
U157	1. Self-inflicted injuries	E950–959	X60–X84, Y870
U158	2. Violence	E960–969	X85–Y09, Y871
U159	3. War	E990–999	Y36
U160	Other intentional injuries	E970–E978	Y35

Source: Mathers, Lopez and others 2004.

a. Deaths coded to "Symptoms, signs and ill-defined conditions" (780–799 in ICD-9 and R00–R99 in ICD-10) are distributed proportionately to all causes within Group I and Group II.

b. Cancer deaths coded to ICD categories for malignant neoplasms of other and unspecified sites including those whose point of origin cannot be determined, and secondary and unspecified neoplasms (ICD-10 C76, C80, C97 or ICD-9 195, 199) were redistributed pro rata across the footnoted malignant neoplasm categories within each age-sex group, so that the category "Other malignant neoplasms" includes only malignant neoplasms of other specified sites.

c. Ischemic heart disease deaths may be miscoded to a number of so-called cardiovascular "garbage" codes. These include heart failure, ventricular dysrhythmias, generalized atherosclerosis, and ill-defined descriptions and complications of heart disease. Proportions of deaths coded to these causes were redistributed to ischemic heart disease as described by Lozano and others (2001). Relevant ICD-9 codes are 427.1, 427.4, 427.5, 428, 429.0, 429.1, 429.2, 429.9, 440.9; relevant ICD-10 codes are I47.2, I49.0, I46, I50, I51.4, I51.5, I51.6, I51.9, I70.9.

d. Injury deaths where the intent is not determined (E980–989 of ICD-9 and Y10–Y34, Y872 in ICD-10) are distributed proportionately to all causes below the group level for injuries.

e. For countries with three-digit ICD-10 data, use: V01–V04, V06, V09–V80, V87, V89, V99. For countries with four-digit ICD-10 data, use: V01.1–V01.9, V02.1–V02.9, V03.1–V03.9, V04.1–V04.9, V06.1–V06.9, V09.2, V09.3, V10.4–V10.9, V11.4–V11.9, V12.3–V12.9, V13.3–V13.9, V14.3–V14.9, V15.4–V15.9, V16.4–V16.9, V17.4–V17.9, V18.4–V18.9, V19.4–V19.6, V20.3–V20.9, V21.3–V21.9, V22.3–V22.9, V23.3–V23.9, V24.3–V24.9, V25.3–V25.9, V26.3–V26.9, V27.3–V27.9, V28.3–V28.9, V29.4–V29.9, V30.4.V30.9, V31.4–V31.9, V32.4–V32.9, V33.4–V33.9, V34.4–V34.9, V35.4–V35.9, V36.4–V36.9, V37.4–V37.9, V38.4–V38.9, V39.4–V39.9, V40.4–V40.9, V41.4–V41.9, V42.4–V42.9, V43.4–V43.9, V44.4–V44.9, V45.4–V45.9, V46.4–V46.9, V47.4–V47.9, V48.4–V48.9, V49.4–V49.9, V50.4–V50.9, V51.4–V51.9, V52.4–V52.9, V53.4–V53.9, V54.4–V54.9, V55.4–V55.9, V56.4–V56.9, V57.4–V57.9, V58.4–V58.9, V59.4–V59.9, V60.4–V60.9, V61.4–V61.9, V62.4–V62.9, V63.4–V63.9, V64.4–V64.9, V65.4–V65.9, V66.4–V66.9, V67.4–V67.9, V68.4–V68.9, V69.4–V69.9, V70.4–V70.9, V71.4–V71.9, V72.4–V72.9, V73.4–V73.9, V74.4–V74.9, V75.4–V75.9, V76.4–V76.9, V77.4–V77.9, V78.4–V78.9, V79.4–V79.9, V80.3–V80.5, V81.1, V82.1, V83.0–V83.3, V84.0–V84.3, V85.0–V85.3, V86.0–V86.3, V87.0–V87.8, V89.2, V89.9, V99, Y850.

Table 3A.3 Data Sources and Methods for Estimation of Mortality by Cause, Age, and Sex

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
Afghanistan			[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Albania	1987–9, 1992–2000	2000	[a]	CodMod	2000
Algeria			[a]	CodMod	South Africa 1996
Andorra			[b]	Based on 2000 data from Aragon, Navarra, and Cataluna provinces of Spain	
Angola			[a]	CodMod	South Africa 1996
Antigua and Barbuda	1961–4, 1966, 1969–78, 1983, 1985–95	1993–5	[c]	Vital registration	Vital registration
Argentina	1966–70, 1977–2001	2001	[b]	Vital registration	Vital registration
Armenia	1981–2, 1985–2001	2001	[a]	CodMod	2001
Australia	1950–2000	2000	[b]	Vital registration	Vital registration
Austria	1955–2001	2001	[b]	Vital registration	Vital registration
Azerbaijan	1981–2, 1985–2001	2001	[a]	CodMod	2001
Bahamas, The	1969, 1971–2, 1974–7, 1979–81, 1983–5, 1987, 1993–8	1996–8	[c]	Vital registration	Vital registration
Bahrain	1985, 1987–8, 1997–2001	2000–1	[b]	Vital registration	Vital registration
Bangladesh			[a]	CodMod	India, Philippines
Barbados	1955–95	1993–5	Preliminary vital registration data for 2000[c]	Vital registration	Vital registration
Belarus	1981–2, 1985–2001	2001	[c]	Vital registration	Vital registration
Belgium	1954–97	1997	[b]	Vital registration	Vital registration
Belize	1964–84, 1986–7, 1989–91, 1993–8	1997–8	[c]	Vital registration	Vital registration
Benin			[a]	CodMod	South Africa 1996
Bhutan			[a]	CodMod	India
Bolivia			[a]	CodMod	Peru 2000
Bosnia and Herzegovina	1985–91, 1999	1999	[c]	Vital registration	Vital registration
Botswana	1995–8		[a]	CodMod	South Africa 1996
Brazil	1977–2000	2000	[a]	CodMod	2000
Brunei Darussalam	1996–2000	1998–2000	[b]	Vital registration	Vital registration
Bulgaria	1964–2001	2001	[c]	Vital registration	Vital registration
Burkina Faso			[a]	CodMod	South Africa 1996
Burundi			[a]	CodMod	South Africa 1996
Cambodia			[a]	CodMod	Philippines, Thailand
Cameroon			[a]	CodMod	South Africa 1996
Canada	1950–2000	2000	[b]	Vital registration	Vital registration
Cape Verde	1980		[a]	CodMod	South Africa 1996
Central African Republic			[a]	CodMod	South Africa 1996
Chad			[a]	CodMod	South Africa 1996
Chile	1954–99	1999	Preliminary vital registration data for 2000[b]	Vital registration	Vital registration

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
China	1987–2000	2000	DSP[a]	Vital registration	Vital registration
Colombia	1953–70, 1972, 1974–7, 1979, 1981, 1984–99	1999	[a]	CodMod	1999
Comoros			[a]	CodMod	South Africa 1996
Congo, Dem. Rep. of			[a]	CodMod	South Africa 1996
Congo, Rep. of			[a]	CodMod	South Africa 1996
Cook Islands	1995–2001	1999–2001	[a]	Vital registration	Vital registration
Costa Rica	1956–2002	2002	[b]	Vital registration	Vital registration
Côte d'Ivoire			Abidjan, 1973–92: deaths assessed by medical personnel in city hospitals. Source: ENSEA, Abidjan[a]	CodMod	South Africa 1996
Croatia	1985–2001	2001	[b]	Vital registration	Vital registration
Cuba	1959, 1964–5, 1968–2001	2001	[b]	Vital registration	Vital registration
Cyprus	1996–9	1997–9	[a]	CodMod	1997–9
Czech Republic	1985–2001	2001	[b]	Vital registration	Vital registration
Denmark	1951–99	1999	[b]	Vital registration	Vital registration
Djibouti			[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2000
Dominica	1961–2, 1967–94	1992–4	[c]	Vital registration	Vital registration
Dominican Republic	1956–63, 1965–92, 1994–8	1998	[a]	CodMod	1998
Ecuador	1961, 1963–75, 1977–2000	2000	[a]	CodMod	2000
Egypt, Arab Rep. of	1954–67, 1970–80, 1987, 1991–2, 1996–2000	2000	[a]	CodMod	2000
El Salvador	1950–74, 1981–4, 1990–3, 1995–9	1999	[a]	CodMod	1999
Equatorial Guinea			[a]	CodMod	South Africa 1996
Eritrea	1998–9		[a]	CodMod	South Africa 1996
Estonia	1981–2, 1985–2001	2001	[b]	Vital registration	Vital registration
Ethiopia			[a]	CodMod	South Africa 1996
Fiji	1978, 1992–7, 1999–2000	2000	[a]	Vital registration	Vital registration
Finland	1952–2001	2001	[b]	Vital registration	Vital registration
France	1950–99	1999	[b]	Vital registration	Vital registration
Gabon			[a]	CodMod	South Africa 1996
Gambia, The			[a]	CodMod	South Africa 1996
Georgia	1981–2, 1985–92, 1994–2000	2000	[a]	CodMod	2000
Germany	1969–2000	2000	[b]	Vital registration	Vital registration
Ghana			Hospital mortality data for Eastern Region, 1990–2000[a]	CodMod	South Africa 1996
Greece	1956–99	1999	[b]	Vital registration	Vital registration
Grenada	1974–8, 1984, 1988, 1994–6	1994–6	[c]	Vital registration	Vital registration

(Continues on the following page.)

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
Guatemala	1958–71, 1974–81, 1984	1996	Preliminary vital registration data for 1996[a]	CodMod	1996
Guinea			[a]	CodMod	South Africa 1996
Guinea-Bissau			[a]	CodMod	South Africa 1996
Guyana	1975–7, 1979, 1984, 1988, 1990, 1993–6	1994–6	[c]	Vital registration	Vital registration
Haiti	1980–1, 1983, 1997, 1999	1999	[a]	CodMod	1999
Honduras	1966, 1968–83		[a]	CodMod	Nicaragua, El Salvador, Guatemala
Hungary	1955–2001	2001	[b]	Vital registration	Vital registration
Iceland	1951–99	1997–9	[b]	Vital registration	Vital registration
India	Survey of Cause of Death (Rural)	1996–8	Urban Medical Certification of Cause of Death System, 1995[a]	Proportionate mortality for urban and rural summed up to national estimate	Cause of death information from urban and rural data sources
Indonesia			[a]	CodMod	Singapore, India, Thailand, Philippines
Iran, Islamic Rep. of	1999–2001	2001	[a]	CodMod	2001 (18 provinces' mortality data)
Iraq			[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Ireland	1950–2000	2000	[c]	Vital registration	Vital registration
Israel	1975–98	1998	[b]	Vital registration	Vital registration
Italy	1951–99	1999	[b]	Vital registration	Vital registration
Jamaica	1960–1, 1964–5, 1967–71, 1975, 1977, 1980–91	1991	[a]	CodMod	1991
Japan	1950–2000	2000	[b]	Vital registration	Vital registration
Jordan	1959–60, 1962–6, 1968, 1970–5, 1978–9		Mortality and causes of death in Jordan 1995–6: assessment by verbal autopsy. Source: S.A. Khoury, D. Massad, and T. Fardous, *Bulletin of the World Health Organization* 77(8)[a]	Verbal autopsy data	Verbal autopsy data
Kazakhstan	1981–2, 1985–2001	2001	[a]	CodMod	2001
Kenya			Ministry of Health, hospital data, 1996, 1998–2000[a]	CodMod	South Africa 1996
Kiribati	1999–2002	2000–2	Ministry of Health, Family Planning and Social Welfare, Third National Health, Family Planning and Social Welfare Plan 1992–5[a]	Vital registration	2000–2
Korea, Democratic People's Rep. of			[a]	CodMod	Philippines, India
Korea, Rep. of	1985–2001	2001	[b]	Vital registration	Vital registration
Kuwait	1972, 1975–87, 1993–2001	1999–2001	[b]	Vital registration	Vital registration
Kyrgyz Republic	1981–2, 1985–2001	2001	[a]	CodMod	2001
Lao PDR			[a]	CodMod	Philippines, Thailand

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
Latvia	1980–2001	2001	[b]	Vital registration	Vital registration
Lebanon	1997–9		[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Lesotho			[a]	CodMod	South Africa 1996
Liberia			[a]	CodMod	South Africa 1996
Libya			[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Lithuania	1981–2, 1985–2001	2001	[b]	Vital registration	Vital registration
Luxembourg	1955–62, 1965–2001	1999–2001	[b]	Vital registration	Vital registration
Macedonia, FYR	1991–2000	2000	[c]	Vital registration	Vital registration
Madagascar			Antananarivo, 1976–95: deaths certified by medical personnel. Source: CEPED, Paris[a]	CodMod	South Africa 1996
Malawi			[a]	CodMod	South Africa 1996
Malaysia	1986, 1990–8		[a]	CodMod	Singapore, China, Thailand
Maldives			[a]	CodMod	India, Philippines
Mali			[a]	CodMod	South Africa 1996
Malta	1955–2001	1999–2001	[b]	Vital registration	Vital registration
Marshall Islands			[a]		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
Mauritania			[a]	CodMod	South Africa 1996
Mauritius	1957–2000	1998–2000	[c]	Vital registration	Vital registration
Mexico	1955–2001	2001	[b]	Vital registration	Vital registration
Micronesia, Federated States of			*1999 Federated States of Micronesia Statistical Yearbook*[a]		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
Moldova	1981–2, 1985–2001	2001	[b]	Vital registration	Vital registration
Monaco			[b]		Based on 1998 data from Provence Alpes Côte d'Azur, Department of France
Mongolia	1990–2000	2000	[a]	CodMod	2000
Morocco	1990–7		[a]	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Mozambique			[a]	CodMod	Zimbabwe 1995, South Africa 1996
Myanmar	1977–8		[a]	CodMod	Philippines, India
Namibia			[a]	CodMod	South Africa 1996
Nauru	1994–6	1994–6	Mortality decline in Nauru. Source: R. Taylor and K. Thoma, unpublished 1998[a]	Vital registration	1994–6
Nepal			[a]	CodMod	Philippines, India
Netherlands	1950–2000	2000	[b]	Vital registration	Vital registration

(Continues on the following page.)

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
New Zealand	1950–99	1999	[b]	Vital registration	Vital registration
Nicaragua	1959, 1961–5, 1968–9, 1973–8, 1988–94, 1996–2000	2000	[a]	CodMod	2000
Niger			[a]	CodMod	South Africa 1996
Nigeria			[a]	CodMod	South Africa 1996
Niue	1995–2000	1998–2000	[a]	Vital registration	Vital registration
Norway	1951–2000	2000	[b]	Vital registration	Vital registration
Oman	1997		[a]	CodMod	Bahrain, Kuwait, 1997–2001
Pakistan			[a]	CodMod	India
Palau			[a]		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
Panama	1954–89, 1996–2000	2000	[a]	CodMod	2000
Papua New Guinea	1977, 1980		[a]	CodMod	Philippines, India
Paraguay	1961–3, 1965–91, 1994, 1996–2000	2000	[a]	CodMod	2000
Peru	1966–73, 1977–8, 1980–3, 1986–92, 1994–2000	2000	[a]	CodMod	2000
Philippines	1963–78, 1981, 1992–8	1998	[a]	CodMod	1998
Poland	1959–2001	2001	[b]	Vital registration	Vital registration
Portugal	1955–2000	2000	[b]	Vital registration	Vital registration
Qatar	1995, 2000–1	2001	[a]	CodMod	2001
Romania	1959–2001	2001	[b]	Vital registration	Vital registration
Russian Federation	1980–2001	2001	[c]	Vital registration	Vital registration
Rwanda			[a]	CodMod	South Africa 1996
St. Kitts and Nevis	1961–3, 1965–7, 1969–95	1993–5	[c]	Vital registration	Vital registration
St. Lucia	1968–81, 1983, 1986–95	1993–5	[c]	Vital registration	Vital registration
St. Vincent and the Grenadines	1970–2, 1974, 1977, 1979, 1982–7, 1995–9	1997–9	[c]	Vital registration	Vital registration
Samoa			Department of Health Statistics, Demographic and Health Survey, 1999 and 2000[a]		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
San Marino	1995–2000	1998–2000	[b]	Vital registration	Vital registration
São Tomé and Principe	1984–5, 1987		[a]	CodMod	South Africa 1996
Saudi Arabia			[a]	CodMod	Bahrain, Kuwait, 1997–2001
Senegal			Niakhar 1983–90: deaths assessed by verbal autopsy. Source: CEPED, Paris[a]	CodMod	South Africa 1996

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
Serbia and Montenegro	2000	2000	b	Vital registration	Vital registration
Seychelles	1981–2, 1985–7, 1997–2000	1998–2000	b	Vital registration	Vital registration
Sierra Leone			a	CodMod	South Africa 1996
Singapore	1955–2001	2001	c	Vital registration	Vital registration
Slovak Republic	1992–2001	2001	b	Vital registration	Vital registration
Slovenia	1985–2001	2001	b	Vital registration	Vital registration
Solomon Islands			a		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
Somalia			a	CodMod	Arab Rep. of Egypt 2000, South Africa 1996
South Africa	1993–6	1996	*National Injury Mortality Surveillance System: Summary Report 2000*; K. Kahn, S. M. Tollman, M. Garenne, and J. S. Gear, "Causes of Death in a Rural Area of South Africa: An International Perspective, *Journal of Tropical Pediatrics,* 46 (June)[c]; and Violence and Injury Surveillance Consortium, *Rapid Assessment of Trauma Facilities at State Hospitals in South Africa,* 2000[a]	CodMod	South Africa 1996
Spain	1951–2000	2000	b	Vital registration	Vital registration
Sri Lanka	1950–68, 1977, 1980–9, 1991–2, 1995–6	1996	a	CodMod	1996
Sudan			a	CodMod	Arab Rep. of Egypt 2000, South Africa 1996
Suriname	1963–6, 1971–3, 1975–82, 1984–92	1990–2	a	Vital registration	Vital registration
Swaziland			a	CodMod	South Africa 1996
Sweden	1951–2000	2000	b	Vital registration	Vital registration
Switzerland	1951–99	1999	b	Vital registration	Vital registration
Syrian Arab Republic	1973–8, 1980–1, 1984–5, 2000–1	2001	a	CodMod	2001
Tajikistan	1981–2, 1985–95, 1999	1999	a	CodMod	1999
Tanzania			a	CodMod	Zimbabwe 1995, South Africa 1996
Thailand	1955–87, 1990–2000	2000	Ministry of Health, verbal autopsy study[a]	Vital registration corrected by verbal autopsy study	
Timor-Leste			a	CodMod	India, Philippines
Togo			a	CodMod	South Africa 1996

(Continues on the following page.)

Table 3A.3 Continued

Country	Vital registration data	Year used	Other sources of information	Method	Cause of death distribution pattern used
Tonga	1998	1998	Report of the Minister of Health for 1994	Vital registration	Vital registration
Trinidad and Tobago	1951–98	1996–8	b	Vital registration	Vital registration
Tunisia			a	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Turkey	1987–98	1998	a	CodMod	1998
Turkmenistan	1981–2, 1985–98	1998	a	CodMod	1998
Tuvalu			a		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru, Fiji
Uganda			a	CodMod	South Africa 1996
Ukraine	1981–2, 1985–2000	2000	c	Vital registration	Vital registration
United Arab Emirates			a	CodMod	Bahrain and Kuwait, 1997–2001
United Kingdom	1950–2000	2000	b	Vital registration	Vital registration
United States	1950–2000	2000	b	Vital registration	Vital registration
Uruguay	1955–60, 1963–78, 1980–91, 1993–2000	2000	b	Vital registration	Vital registration
Uzbekistan	1981–2, 1985–2000	2000	a	CodMod	2000
Vanuatu			Ministry of Health, hospital data, 2001[a]		Cook Islands, Marshall Islands, Niue, Samoa, Tonga, Tuvalu, Vanuatu, Kiribati, Nauru and Fiji
Venezuela (R.B. de)	1955–83, 1985–90, 1992–2000	2000	b	Vital registration	Vital registration
Vietnam			a	CodMod	China, India, and Thailand
Yemen, Republic of			a	CodMod	Arab Rep. of Egypt 2000, Islamic Rep. of Iran 2001
Zambia	1999–2000		a	CodMod	South Africa 1996
Zimbabwe	1990, 1994–5		a	CodMod	Zimbabwe 1995, South Africa 1996

Source: Mathers, Lopez, and others 2004.

Note: CEPED = Centre Population et Développement; ENSEA = l'Ecole Nationale Supérieure de Statistiques et d'Economie Appliquée.

a. Epidemiological estimates obtained from studies, WHO technical programs, and UNAIDS for the following conditions: HIV/AIDS, tuberculosis, measles, pertussis, poliomyelitis, tetanus, lower respiratory infections, Chagas' disease, maternal conditions, perinatal conditions, cancers, drug use disorders, rheumatoid arthritis, and war.

b. Epidemiological estimates obtained from studies, WHO technical programs, and UNAIDS for the following conditions: drug use disorders and war.

c. Epidemiological estimates obtained from studies, WHO technical programs, and UNAIDS for the following conditions: HIV/AIDS, drug use disorders, and war.

Table 3A.4 GBD Regional Epidemiological Analysis Categories

GBD region	Mortality stratum	Region code	WHO member states	WHO region
AFRO	D[a]	1	Algeria, Angola, Benin, Burkina Faso, Cameroon, Cape Verde, Chad, Comoros, Equatorial Guinea, Gabon, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Madagascar, Mali, Mauritania, Mauritius, Niger, Nigeria, São Tomé and Principe, Senegal, Seychelles, Sierra Leone, Togo	AFRO
			Djibouti, Somalia, Sudan	EMRO
AFRO	E	2	Botswana, Burundi, Central African Republic, Democratic Republic of Congo, Republic of Congo, Côte d'Ivoire, Eritrea, Ethiopia, Kenya, Lesotho, Malawi, Mozambique, Namibia, Rwanda, South Africa, Swaziland, Tanzania, Uganda, Zambia, Zimbabwe	AFRO
AMRO	A[b]	3	Canada, United States of America	AMRO
AMRO	B[c]	4	Antigua and Barbuda, Argentina, The Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Grenada, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, República Bolivariana de Venezuela	AMRO
AMRO	D	5	Bolivia, Ecuador, Guatemala, Haiti, Nicaragua, Peru	AMRO
EMRO	B	6	Bahrain, Islamic Republic of Iran, Jordan, Kuwait, Lebanon, Libya, Oman, Qatar, Saudi Arabia, Syrian Arab Republic, Tunisia, United Arab Emirates	EMRO
			Cyprus	EURO
EMRO	D[d]	7	Arab Republic of Egypt, Iraq, Morocco, Republic of Yemen	EMRO
EURO	A[e]	8	Andorra, Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Israel, Italy, Luxembourg, Malta, Monaco, Netherlands, Norway, Portugal, San Marino, Slovenia, Spain, Sweden, Switzerland, United Kingdom	EURO
EURO	B1	9	Albania, Bosnia and Herzegovina, Bulgaria, Georgia, Former Yugoslav Republic of Macedonia, Poland, Romania, Serbia and Montenegro, Slovak Republic, Turkey	EURO
EURO	B2	10	Armenia, Azerbaijan, Republic of Kyrgyz, Tajikistan, Turkmenistan, Uzbekistan	EURO
EURO	C	11	Belarus, Estonia, Hungary, Kazakhstan, Latvia, Lithuania, Moldova, Russian Federation, Ukraine	EURO
SEARO	B	12	Indonesia, Sri Lanka, Thailand	SEARO
			Brunei Darussalam, Malaysia, the Philippines, Singapore	WPRO
SEARO	D	13	Bangladesh, Bhutan, India, Maldives, Nepal, Timor-Leste	SEARO
			Afghanistan, Pakistan	EMRO
WPRO	A	14	Australia, Japan, New Zealand	WPRO
WPRO	B1	15	China, Mongolia, Republic of Korea	WPRO
			Democratic People's Republic of Korea	SEARO
WPRO	B2	16	Cambodia, Lao People's Democratic Republic, Vietnam	WPRO
			Myanmar	SEARO
WPRO	B3[f]	17	Cook Islands, Fiji, Kiribati, Marshall Islands, Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga, Tuvalu, Vanuatu	WPRO

Source: Authors' compilation.

a. Réunion and St. Helena are assumed to have the same burden of disease rates as the WHO member states shown.

b. St. Pierre et Miquelon is assumed to have the same burden of disease rates as the WHO member states shown.

c. Anguilla, Aruba, Bermuda, British Virgin Islands, Caymen Islands, Falkland Islands, French Guiana, Guadeloupe, Martinique, Montserrat, Netherlands Antilles, Puerto Rico, Turks and Caicos Islands, and U.S. Virgin Islands are assumed to have the same burden of disease rates as the WHO member states shown.

d. Western Sahara is assumed to have the same burden of disease rates as the WHO member states shown. Burden of disease rates for the West Bank and Gaza were estimated using death registration data and separate estimates of war deaths.

e. Channel Islands, Faeroe Islands, Isle of Man, Gibraltar, Greenland, Holy See (Vatican City), and Liechtenstein are assumed to have the same burden of disease rates as the WHO member states shown.

f. Samoa, French Polynesia, Guam, New Caledonia, Northern Mariana Islands, Pitcairn, Tokelau, and Wallis and Futuna Islands are assumed to have the same burden of disease rates as the WHO member states shown.

Table 3A.5 GBD Cause Categories, Sequelae, and Case Definitions

GBD cause/sequela	Case definition	Version[a]
I. Communicable, maternal, perinatal, and nutritional conditions		
A1. Tuberculosis	Cases refer to individuals with clinical tuberculosis, normally pulmonary sputum culture positives and extra-pulmonary cases	2
HIV sero-negative cases	HIV sero-negative cases	
HIV sero-positive cases	HIV sero-positive cases	
A2a. Syphilis	Acute and chronic infection with *Treponema pallidum*	2
Congenital syphilis	Syphilis in the newborn due to maternal-fetal transmission in utero	
Low birthweight	Birthweight of less than 2,500 g	
Primary	Initial infection in adults resulting in primary chancre at site of inoculation	
Secondary	Disseminated disease, which appears 2–8 weeks after the primary stage and is usually marked by a rash	
Tertiary—neurologic	Late stage of disease with varied neurological manifestations	
A2b. Chlamydia	Bacterial infection transmitted vaginally, anally, or perinatally with *Chlamydia trachomatis* (excludes ocular trachoma)	2
Cervicitis	Inflammation of the cervix uteri due to *Chlamydia trachomatis*	
Neonatal pneumonia	Pneumonia in infants due to infection with Chlamydia	
Ophthalmia neonatorum	Purulent conjunctivitis in infants less than 30 days, acquired during passage through an infected birth canal	
Low birthweight	Birthweight of less than 2,500 g	
Pelvic inflammatory disease	Inflammation of the adnexa of the uterus (includes endometritis)	
Ectopic pregnancy	Pregnancy located outside the uterus	
Tubo-ovarian abscess	Abscess located in the fallopian tubes or ovaries	
Chronic pelvic pain	Chronic pelvic pain following reproductive tract infection with Chlamydia	
Infertility	Total infertility due to Chlamydia-related pelvic inflammatory disease and ectopic pregnancy in women and epididymitis in men.	
Symptomatic urethritis	Inflammation of the urethra causing symptoms including dysuria and/or hematuria	
Epididymitis	Inflammation of the sperm ducts	
A2c. Gonorrhea	Bacterial infection transmitted vaginally, anally, or perinatally with *Neisseria gonorrhea*	2
Ophthalmia neonatorum	Purulent conjunctivitis in infants less than 30 days, acquired during passage through an infected birth canal	
Low birthweight	Birthweight of less than 2,500 g	
Corneal scar—blindness	Permanent corneal scar resulting from corneal ulceration due to infection with Neisseria gonorrhea and leading to blindness	
Corneal scar—low vision	Permanent corneal scar resulting from corneal ulceration due to infection with *Neisseria gonorrhea* and leading to low vision	
Cervicitis	Inflammation of the cervix uteri due to *Neisseria gonorrhea*	
Pelvic inflammatory disease	Includes both acute and recurrent pelvic inflammatory disease due to gonorrhea	
Ectopic pregnancy	Pregnancy located outside the uterus	
Tubo-ovarian abscess	Abscess located in the fallopian tubes or ovaries	
Chronic pelvic pain	Chronic pelvic pain following reproductive tract infection with *Neisseria gonorrhea*	
Infertility	Total infertility due to gonorrhea-related pelvic inflammatory disease and ectopic pregnancy in women and epididymitis in men	
Symptomatic urethritis	Inflammation of the urethra causing symptoms including dysuria and/or hematuria	
Epididymitis	Inflammation of the sperm ducts	
Stricture	Narrowing of the urethra due to urethritis	

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
A3. HIV/AIDS		2
HIV cases	HIV sero-positive, not yet progressed to AIDS	
AIDS cases	HIV sero-positive and progressed to AIDS	
A4. Diarrheal diseases—episodes	Episodes of diarrhea including acute watery diarrhea, persistent diarrhea, and dysentery; deaths of children with both measles and diarrhea or both lower respiratory infection and diarrhea are not included in estimates of diarrhea mortality	2
A5a. Pertussis	Acute bacterial infection of the respiratory tract with *Bordetella pertussis* or *parapertussis*	2
Episodes	Acute bacterial infection of the respiratory tract with *Bordetella pertussis* or *parapertussis,* characterized by paroxysmal, violent coughs followed by high-pitched inspiratory whoop	
Encephalopathy	Degenerative disease of the brain, which in pertussis is usually a result of hypoxia, leading to mental retardation	
A5b. Poliomyelitis—lameness	Viral infection characterized by acute flaccid paralysis and proven by isolation of polio virus from stool	2
A5c. Diphtheria	Acute disease caused by toxin-producing *Corynebacterium diphtheriae*	2
Episodes	Acute bacterial disease involving primarily tonsils, pharynx, larynx, nose, and other sites, characterized by grayish plaques or membranes with surrounding tissue inflammation	
Neurological complications	Polyneuritis involving both cranial and peripheral nerve palsies, which are largely reversible	
Myocarditis	Inflammation of the heart muscle leading to electrocardiographic aberrations and sometimes permanent damage with congestive heart failure, which may be fatal	
A5d. Measles—episodes	Acute and highly contagious infection with measles virus characterized by red, blotchy rash, fever, cough, coryza, and conjunctivitis	2
A5e. Tetanus—episodes	Neonatal: infection with *Clostridium tetani* in infants less than 30 days with progressive difficulty and inability to feed because of trismus, generalized stiffness, spasms, and opisthotonus	2
	Non-neonatal: infection with *Clostridium tetani* in non-neonates with initial localized spasms lead to general rigidity, opisthotonus, and risus sardonicus	
A6. Meningitis	Acute bacterial disease with sudden onset and fever, intense headache, nausea, vomiting, neck stiffness, and—in meningococcal disease—petechial rash with pink macules; must be accompanied by laboratory evidence (in cerebrospinal fluid or blood) of *Neisseria meningitidis, Strep pneumoniae,* or *Haemophilus influenzae type B*	2
Streptococcus pneumoniae—episodes	Acute bacterial disease with sudden onset and fever, intense headache, nausea, vomiting, and neck stiffness; must be accompanied by laboratory evidence (in cerebrospinal fluid or blood) of *Strep pneumoniae*	
Haemophilus influenzae—episodes	Acute bacterial disease with sudden onset and fever, intense headache, nausea, vomiting, and neck stiffness; must be accompanied by laboratory evidence (in cerebrospinal fluid or blood) of *Haemophilus influenza type B*	
Neisseria meningitidis—episodes	Acute bacterial disease with sudden onset and fever, intense headache, nausea, vomiting, and neck stiffness; must be accompanied by laboratory evidence (in cerebrospinal fluid or blood) of *Neisseria meningitidis*	
Meningococcaemia without meningitis—episodes	Invasion of the bloodstream with *Neisseria meningitidis.*	
Deafness	At least *moderate* impairment, where person is able to hear and repeat words using raised voice at 1 meter, resulting from meningitis	
Seizure disorder	Seizures of any type that were present at least six months after hospitalization, resulting from meningitis	

(Continues on the following page.)

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
Motor deficit	Spasticity or paresis of one or more limbs resulting from meningitis	
Mental retardation	IQ of 70 or below	
A7a. Hepatitis B—episodes	Inflammation of the liver due to Hepatitis B virus	1
A7b. Hepatitis C—episodes	Inflammation of the liver due to Hepatitis C virus	1
A8. Malaria	Infectious disease caused by protozoa of the genus *Plasmodium*	1
Episodes	Attacks of chills, fever, and sweating due to *Plasmodium* infection	
Anemia	Defined using WHO criteria for mild to very severe anemia	
Neurological sequelae	Includes hemiplegia, aphasia, ataxia, and cortical blindness	
A9a. Trypanosomiasis—episodes	Infection with protozoa of the genus *Trypanosoma,* excluding *T. cruzi*	1
A9b. Chagas' disease	Infection with *Trypanosoma cruzi*	2
Infection	Episode of infection with *Trypanosoma cruzi*	
Cardiomyopathy without congestive heart failure	Disorder of the heart muscle resulting from infection with *T. cruzi* without congestive heart failure	
Cardiomyopathy with congestive heart failure	Disorder of the heart muscle resulting from infection with *T. cruzi* with congestive heart failure	
Megaviscera	Dilation of interior organ in the abdominal cavity, particularly of esophagus and colon, due to *T. cruzi*	
A9c. Schistosomiasis—infection	Infection and associated direct mortality from schistosomiasis; does not include estimates of mortality from bladder cancer, cirrhosis, or colon cancer that may be related to schistosomiasis	1
A9d. Leishmaniasis	Infection with flagellate protozoa of the genus *Leishmania*	1
Visceral	Generalized involvement of the reticulo-endothelial system due to infection with *Leishmania*	
Cutaneous	Presence of skin lesions (which may ulcerate) due to infection with *Leishmania*	
A9e. Lymphatic filariasis	Infection with filariae (*Wucheria bancrofti* and *Brugia malayi*)	1
Hydrocele > 15cm	Circumscribed collection of fluid in testicle or along the spermatic cord due to filariasis	
Bancroftian lymphoedema	Swelling of subcutaneous tissues due to the presence of excessive lymph fluid as a result of infection with *Wucheria bancrofti*	
Brugian lymphedema	Swelling of subcutaneous tissues due to the presence of excessive lymph fluid as a result of infection with *Brugia malaye*	
A9f. Onchocerciasis	Infection with worms of the genus *Onchocerca*	2
Blindness	Inability to distinguish the fingers of a hand at a distance of 3 meters, or less than 5 percent of remaining vision as compared to a normally sighted individual, as a result of infection with *Onchocerca volvulus*	
Itching	Itchy dermatitis as a result of infection with *Onchocerca volvulus*	
Low vision	Corrected visual acuity in the better eye of less than 6/18 but better than or equal to 3/60 due to infection with *Onchocerca volvulus*	
A10. Leprosy	Chronic disease resulting from infection with *Mycobacterium leprae*	2
Cases	WHO case definition: Person showing clinical signs of leprosy, with or without bacteriological confirmation of the diagnosis, and requiring chemotherapy	
Disabling leprosy	Grade 1 and 2 of WHO grades of disability for leprosy	
A11. Dengue	Mosquito-born disease caused by viruses of the family *Flaviviridae*	0
Dengue hemorrhagic fever	Severe manifestation of dengue infection characterized by multiple hemorrhages and potentially followed by circulatory failure, neurological manifestations, and shock	

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
A12. Japanese encephalitis	Mosquito-born encephalitis caused by Japanese encephalitis virus	0
Episodes	Episode of Japanese encephalitis infection	
Cognitive impairment	Reduced cognitive function resulting from encephalitis due to Japanese encephalitis virus	
Neurological sequelae	Neurological deficits resulting from encephalitis due to Japanese encephalitis virus	
A13. Trachoma	Cases of follicular or inflammatory trachoma	2
Blindness	Corrected visual acuity in the better eye of less than 3/60	
Low vision	Corrected visual acuity in the better eye of less than 6/18 but better than or equal to 3/60	
A14a. Ascariasis	Infection with roundworms of the genus *Ascaris*	1
High-intensity infection	Infection resulting in at least 20–40 worms per stool load	
Contemporaneous cognitive deficit	Reduction in cognitive ability in school-age children, which occurs only while infection persists	
Cognitive impairment	Delayed psychomotor development and impaired performance in language skills, motor skills, and coordination equivalent to a 5- to 10-point deficit in IQ	
Intestinal obstruction	Blockage of the intestines due to worm mass	
A14b. Trichuriasis	Infection with the whipworm *Trichuris trichiura*	1
High-intensity infection	Infection resulting in at least 250–500 worms per stool load	
Contemporaneous cognitive deficit	Reduction in cognitive ability in school-age children, which occurs only while infection persists	
Massive dysentery syndrome	Rectal prolapse and/or tenesmus and/or bloody mucoid stools due to carpeting of intestinal mucosa by worms	
Cognitive impairment	Delayed psychomotor development and impaired performance in language skills, motor skills, and coordination equivalent to a 5- to 10-point deficit in IQ	
A14c. Hookworm disease	Infection with hookworms of the genus *Ancylostomiasis* and *Necatoriasis*	1
High-intensity infection	Infection resulting in at least 80–160 worms per stool load	
Anemia	Anemia due to hookworm infection	
Cognitive impairment	Delayed psychomotor development and impaired performance in language skills, motor skills, and coordination equivalent to a 5- to 10-point deficit in IQ	
B1. Lower respiratory infections		2
Episodes	Episode of lower respiratory infection	
Chronic sequelae	Includes bronchiectasis and impaired lung function as measured by a decrease in forced expiratory volume	
B2. Upper respiratory infections		2
Episodes	Episode of upper respiratory infection	
Pharyngitis	Inflammation of the pharynx	
B3. Otitis media	Inflammation of the middle ear	0
Episodes	Episodes of acute otitis media	
Deafness	At least moderate impairment, where person is able to hear and repeat words using raised voice at 1 meter, resulting from otitis media	
C1. Maternal hemorrhage		2
Episodes	All episodes of antepartum and postpartum hemorrhage	
Severe anemia	Blood hemoglobin level $<$ 10 mg/dl following postpartum hemorrhage	

(Continues on the following page.)

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
C2. Maternal sepsis		2
Episodes	Major puerperal infection, excluding infection following abortion, minor genital tract infection following delivery, and urinary tract infections following delivery	
Infertility	Failure to conceive again after a previous conception (secondary infertility), caused by maternal sepsis	
C3. Hypertensive disorders of pregnancy—episodes	Includes pre-eclampsia and eclampsia	2
C4. Obstructed labor		2
Episodes	Labor with no advance of the presenting part of the fetus despite strong uterine contractions	
Cesarean section for obstructed labor	Cases of obstructed labor for which cesarean section has been performed	
Stress incontinence	Cases with leaking of urine during coughing or sneezing	
Rectovaginal fistula	Cases with a communication between the vaginal wall and the bladder/rectum resulting from obstructed labor	
C5. Abortion		2
Episodes	Episodes of unsafe abortion (termination of an unwanted pregnancy either by persons lacking the necessary skills or in an environment lacking the necessary standards or both)	
Infertility	Failure to conceive following unsafe abortion	
Reproductive tract infection	Cases of reproductive tract infection resulting from unsafe abortion	
D1. Low birthweight—all sequelae	Birthweight below 2,500 g, including small-for-gestational-age infants and premature infants (all developmental sequelae due to low birthweight have been clustered into one outcome, which includes cerebral palsy, mental retardation, epilepsy, hearing loss, and vision loss)	2
D2. Birth asphyxia and birth trauma—all sequelae	All developmental sequelae due to birth asphyxia and birth trauma have been clustered into one outcome, which includes cerebral palsy, mental retardation, epilepsy, hearing loss, and vision loss	2
E1. Protein-energy malnutrition		2
Wasting	Observed weight for height at least 2 standard deviations below the mean for children ages 0–5	
Stunting	Observed height for age at least 2 standard deviations below the mean for children ages 0–5	
Developmental disability	Limited physical and mental ability to perform most activities in *all* of the following areas: recreation, education, procreation, or occupation	
E2. Iodine deficiency		2
Goiter grades 1 and 2	Cases of goiter grade 1 (a mass in the neck consistent with an enlarged thyroid—grade 1: palpable but not visible) and grade 2 (a mass in the neck consistent with an enlarged thyroid—grade 2: palpable and visible in neutral neck position)	
Mild developmental disability	Any of the following due to iodine deficiency:	
	Bilateral hearing loss, delay of walking ability, mild intellectual impairment	
Cretinoidism	Hypothyroid cretinism: Hypothyroidism and stunting as a result of iodine deficiency	
	Neurological cretinism: Mental deficiency (IQ below 70), deaf-mutism, and spastic paralysis as a result of iodine deficiency	
Cretinism	Some but not all features of full cretinism as a result of iodine deficiency	
E3. Vitamin A deficiency		2
Xerophthalmia	All ocular manifestations of vitamin A deficiency: night blindness, Bitot's spots, corneal xerosis, corneal ulceration, and corneal scarring	
Corneal scar	Permanent corneal scar resulting from corneal ulceration due to vitamin A deficiency and potentially leading to blindness	

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
E4. Iron-deficiency anemia		2
Mild	Hemoglobin of 100–109 g/l in pregnant women, 110–119 g/l in children and adult women, and 120–129 g/l in adult men	
Moderate	Hemoglobin of 70–99 g/l in pregnant women, 80–109 g/l in children and adult women, and 90–119 g/l in adult men	
Severe	Hemoglobin of 40–69 g/l in pregnant women, 50–79 g/l in children and adult women, and 60–89 g/l in adult men	
Cognitive impairment	Delayed psychomotor development and impaired performance in language skills, motor skills, and coordination equivalent to a 5- to 10-point deficit in IQ	
II. Noncommunicable diseases		
A. Malignant neoplasms sequelae		2
Diagnosis and primary therapy	Chemotherapy, radiotherapy, surgery	
Control	Clinical observation during control/remission phase	
Preterminal (metastasis)	Metastatic dissemination of the disease	
Terminal	Terminal stage prior to death	
Mastectomy	Mastectomy in five-year breast cancer survivor	
Infertility	Infertility in five-year survivor of cervical, uterine, or ovarian cancer	
Incontinence or impotence	Incontinence or impotence in five-year survivor of prostate cancer	
Stoma	Stoma in five-year survivor of digestive system cancer	
C. Diabetes mellitus		2
Cases	Venous plasma concentration of μ 11.1 mmol/l 2 h after a 75 g oral glucose challenge	
Diabetic foot	Chronic or recurring diabetic foot ulcers	
Neuropathy	Loss of reflexes and vibration; damage and dysfunction of sensory, motor, or autonomic nerves attributable to diabetes	
Retinopathy—blindness	Retinopathy: Microaneurysms or worse lesions in at least one eye; progressive damage of the small blood vessels of the retina	
	Blindness: Unable to distinguish the fingers of a hand at the distance of 3 meters, or has less than 5 percent of remaining vision as compared to a normally sighted individual; visual acuity of less than 3/60 or corresponding visual field loss in the better eye with best possible correction	
Amputation	Surgical elimination of the lower extremity or part of it due to gangrene	
E1. Unipolar depressive disorders		2
Mild episode	Mild major depressive episode (ICD-10 codes F 32.0 and F 33.0)	
Moderate episode	Moderate major depressive episode (ICD-10 codes F 32.1 and F 33.1)	
Severe episode	Severe major depressive episode (ICD-10 codes F 32.2 , F 32.3, F 33.2 and F 33.3)	
Dysthymia	Dysthymia case with no concurrent major depressive episode	
E2. Bipolar affective disorder—cases	Cases meeting ICD-10 criteria	2
E3. Schizophrenia—cases	Cases meeting ICD-10 criteria	2
E4. Epilepsy—cases	Cases meeting ILAE definition	1
	Cases meeting ICD-10 criteria for alcohol dependence and harmful use (F10.1 and F 10.2), excluding cases with comorbid depressive episode	
E6. Alzheimer's and other dementias—cases	Mild, moderate, and severe Alzheimer's disease; senility; and other dementias	2
E7. Parkinson's disease—cases	Cases meeting clinical criteria for Parkinson's disease	1
E8. Multiple sclerosis—cases	Cases of chronic or intermittent relapsing multiple sclerosis	1

(Continues on the following page.)

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
E9. Drug use disorders	Cases meeting ICD-10 criteria for opioid dependence and harmful use (F 11.1 F 11.2) or cocaine dependence and harmful use (F 14.1 and F 14.2), excluding cases with comorbid depressive episode	2
E10. Post-traumatic stress disorder—cases	Cases meeting DSM IV criteria[b] for post-traumatic stress disorder, excluding cases with comorbid depressive episode or alcohol and drug use (harmful and/or dependence)	2
E11. Obsessive-compulsive disorder—cases	Cases meeting ICD-10 criteria (F 42), excluding cases with comorbid depressive episode	2
E12. Panic disorder—cases	Cases meeting ICD-10 criteria for panic disorder (F 41.0) or agoraphobia with panic disorder (F 40.01), excluding cases with comorbid depressive episode.	2
E13. Insomnia (primary)	Cases meeting DSM IV criteria for primary insomnia (307.42) where the insomnia causes problems with usual activities; excludes cases with comorbid depressive episode or alcohol and drug use (harmful and/or dependence)	2
E14. Migraine	Cases meeting IHS definition for migraine	2
E15. Mild mental retardation attributable to lead exposure	IQ in the range of 50–69 attributable to childhood lead exposure	2
F1. Glaucoma	Cases of primary angle closure glaucoma and primary open angle glaucoma	2
Low vision	Corrected visual acuity in the better eye of less than 6/18 but better than or equal to 3/60	
Blindness	Corrected visual acuity in the better eye of less than 3/60	
F2. Cataracts	Cases of senile cataract causing progressive visual impairment	2
Low vision	Corrected visual acuity in the better eye of less than 6/18 but better than or equal to 3/60	
Blindness	Corrected visual acuity in the better eye of less than 3/60	
F3. Vision disorders, age-related	Low vision or blindness due to macular degeneration, refractive errors, or other age-related causes; excludes sight loss due to congenital causes, other diseases, or injury	2
Low vision	Corrected visual acuity in the better eye of less than 6/18 but better than or equal to 3/60	
Blindness	Corrected visual acuity in the better eye of less than 3/60	
F4. Hearing loss, adult onset	Cases of adult onset hearing loss due to aging or noise exposure; excludes hearing loss due to congenital causes, infectious diseases, other diseases, or injury	2
Mild hearing loss, untreated	Hearing threshold level in the better ear is 41–60 dBHTL (averaged over 0.5, 1, 2, 4kHz) (some difficulty understanding or actively participating in a conversation with one person, great difficulty with more than one person); person does not use a hearing aid	
Moderate hearing loss, treated	Hearing threshold level in the better ear is 41–60 dBHTL (averaged over 0.5, 1, 2, 4kHz) (some difficulty understanding or actively participating in a conversation with one person, great difficulty with more than one person); person uses a hearing aid	
Severe or profound hearing loss, untreated	Hearing threshold level in the better ear is 61 dBHTL or more (averaged over 0.5, 1, 2, 4kHz) (great difficulty or unable to understand or participate in a conversation with one other person); person does not use a hearing aid	
Severe or profound hearing loss, treated	Hearing threshold level in the better ear is 61 dBHTL or more (averaged over 0.5, 1, 2, 4kHz) (great difficulty or unable to understand or participate in a conversation with one other person); person uses a hearing aid	
G1. Rheumatic heart disease	Symptomatic cases of congestive heart failure due to rheumatic heart disease	0
G2. Hypertensive heart disease	Symptomatic cases of congestive heart failure due to hypertensive heart disease	0

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
G3. Ischemic heart disease		2
Acute myocardial infarction	Definite and possible episodes of acute myocardial infarction according to MONICA study criteria	
Angina pectoris	Cases of clinically diagnosed angina pectoris or definite angina pectoris according to Rose questionnaire	
Congestive heart failure	Mild and greater (Killip scale k2–k4)	
G4. Cerebrovascular disease		2
First-ever stroke cases	First-ever stroke according to WHO definition; includes subarachnoid hemorrhage, but excludes transient ischemic attacks, subdural hematoma, and hemorrhage or infarction due to infection or tumor	
Long-term stroke survivors	Persons who survive more than 28 days after first-ever stroke	
G5. Inflammatory heart diseases		0
Myocarditis	Symptomatic cases of congestive heart failure due to myocarditis	
Pericarditis	Symptomatic cases of congestive heart failure due to pericarditis	
Endocarditis	Symptomatic cases of congestive heart failure due to endocarditis	
Cardiomyopathy	Symptomatic cases of congestive heart failure due to cardiomyopathy	
H1. Chronic obstructive pulmonary disease—symptomatic cases	Chronic (stable) airways obstruction with $FEV_1 < 1$ liter (corresponding to symptomatic disability)	2
H2. Asthma—cases	Reported wheeze in the last 12 months plus current bronchial hyperresponsiveness, defined as a 20 percent fall in FEV_1 with a provoking concentration of histamine (PC20) at 8 mg/ml or less	1
I1. Peptic ulcer disease	Individuals with peptic ulcers, most of whom have recurrent intermittent symptoms	0
Cases with antibiotic treatment	Active gastric or peptic duodenal ulcer receiving appropriate antibiotic treatment	
Cases not treated with antibiotic	Other active gastric or peptic duodenal ulcer; includes untreated cases and cases receiving symptomatic treatment	
I2. Cirrhosis of the liver—symptomatic cases	Individuals with symptomatic cirrhosis	0
I3. Appendicitis—episodes	Episodes of acute appendicitis (treated or untreated)	0
J1. Nephritis and nephrosis		0
Acute glomerulonephritis	Acute episode of glomerulonephritis	
End-stage renal disease	End-stage renal failure with or without dialysis, excluding diabetic nephropathy and nephropathy due to cancers, congenital conditions, and injury	
J2. Benign prostatic hypertrophy—symptomatic cases	Individuals with some, albeit intermittent, symptoms from benign prostatic hypertrophy	0
L1. Rheumatoid arthritis—cases	Definite or classical rheumatoid arthritis by 1958 ARA or 1987 ACR criteria	2
L2. Osteoarthritis		2
Hip	Symptomatic osteoarthritis of the hip, radiologically confirmed as Kellgren-Lawrence grade 2–4	
Knee	Symptomatic osteoarthritis of the knee, radiologically confirmed as Kellgren-Lawrence grade 2–4	
L3. Gout	Cases of gout (ARA 1977 survey criteria; at least 6 of 11 symptoms)	1
L4. Low back pain		1
Episode of limiting low back pain	Acute episode of low back pain resulting in moderate or greater limitations to mobility and usual activities; excludes low back pain due to intervertebral disc displacement or herniation, and low back pain that does not result in some limitations to mobility and usual activities	

(Continues on the following page.)

Table 3A.5 Continued

GBD cause/sequela	Case definition	Version[a]
Acute intervertebral disc disorder	Episode of intervertebral disc displacement or herniation	
Chronic intervertebral disc disorder	Disorder of intervertebral disc resulting in pain and disability that does not resolve within six weeks following treatment (medical or surgical)	
M1. Abdominal wall defect—cases	Live-born cases with exomphalos or gastroschisis	0
M2. Anencephaly—cases	Live-born cases with anencephaly	0
M3. Anorectal atresia—cases	Live-born cases with anorectal atresia	0
M4. Cleft lip—cases	Live-born cases, includes individuals who have had surgical correction	0
M5. Cleft palate—cases	Live-born cases, includes individuals who have had surgical correction	0
M6. Esophageal atresia—cases	Live-born cases with esophageal atresia	0
M7. Renal agenesis—cases	Live-born cases with renal agenesis	0
M8. Down syndrome—cases	Live-born cases with Down syndrome	0
M9. Congenital heart anomalies—cases	Live-born cases with major congenital malformations of the heart	0
M10. Spina bifida—cases	Live-born cases with spina bifida aperta (low, medium, or high level)	0
N1. Dental caries—episodes	Episodes per person, not per tooth, quadrant, or sextant	0
N2. Periodontal disease—cases	Pockets greater than 6 mm deep	0
N3. Edentulism—cases	Cases of treated and untreated edentulism (absence of all teeth)	0
III. Injuries		
External cause categories	Includes injury severe enough to warrant medical attention or that leads immediately to death. In other words, injuries that are severe enough that if an individual had access to a medical facility he or she would seek attention[c]	
A1. Road traffic accidents	Includes crashes and pedestrian injuries due to motor vehicles	2
A2. Poisonings	Only one outcome is included for poisonings	2
A3. Falls	Includes falls resulting from osteoporotic fractures	2
A4. Fires	Most of the sequelae of fires are due to burns; some individuals, however, jump from buildings or are otherwise injured because of fires	2
A5. Drownings	Other than drowning and near-drowning rates, the only other major disabling sequelae from near-drowning included is quadriplegia	2
A6. Other unintentional injuries	This is not a residual category, but includes injuries due to environmental factors, machinery and electrical equipment, cutting and piercing implements, and various other external causes of unintentional injury	2
B1. Self-inflicted injuries	Suicide attempts, whether or not resulting in death	2
B2. Violence	Interpersonal violence, including assault and homicide	2
B3. War	Injuries directly attributable to war or organized civil conflict in combatants and noncombatants	2
Type of injury—sequelae	For each of the external cause categories, injury sequelae defined in terms of type of injury were analyzed. The type of injury sequelae were defined in terms of ICD-9 and ICD-10 nature of injury codes (N-codes) as follows: *ICD-9 Code* *ICD-10 Code*	

Table 3A.5 Continued

GBD cause/sequela	ICD-9 code	ICD-10 code
1. Fractures		
Skull—short-term[d]	800 to 801	S02.0/1/7/9, T90.2
Skull—long-term[d]	800 to 801	S02.0/1/7/9, T90.2
Face bones[d]	802	S02.2/6/8
Vertebral column	805	S12, S22.0/1, S32.0/7, T91.1
Rib or sternum[e]	807	S22.2-9
Pelvis[e]	808	S32.1-5/8, T91.2
Clavicle, scapula or humerus[f]	810–812	S42, S49.7
Radius or ulna[f]	813	S52, S59.7, T10, T92.1
Hand bones[f]	814–817	S62, S69.7, T92.2
Femur—short-term[g]	820–821	S72, S79.7
Femur—long-term[g]	820–821	S72, S79.7
Patella, tibia, or fibula[g]	822–823	S82.0-4, S82.7/9, S89.7, T12
Ankle[g]	824	S82.5-6/8
Foot bones[g]	825–826	S92, S99.7
2. Injured spinal cord	806 and 952	S14, S24, S34, T06.0/1, T08, T91.3
3. Dislocations		
Shoulder, elbow, or hip	831, 832, 835	S43, S73
Other dislocation	830, 833–834, 836–839	S03.0-3, S13, S23, S33, S53, S63.0/1, S83.1-3, S93.1-3, T03, T11.2, T13.2, T14.3, T92.3, T93.3
	840–848	S03.4/5, S16, S29.0, S39.0, S46, S56, S63.5-7, S66, S76, S83.4/7, S86, S93.4/6, S96, T06.4, T11.5, T13.5, T14.6, T92.5, T93.5
4. Sprains		
5. Intracranial injuries		
Short-term	850–854	S06, T90.5
Long-term	850–854	S06, T90.5
6. Internal injuries	860–869	S25-S27, S35-S37, S39.6, T06.4, T91.4/5
7. Open wound	870, 872–884, 890–894	S01, S08, S11, S15, S21, S31, S41, S45, S51, S55, S61, S65, S71, S75, S81, S85, S91, S95, T01, T11.1/4, T13.5, T14.6, T90.1, T92.5, T93.5
8. Injury to eyes		
Short-term	871, 950	S05, T90.4
Long-term	871, 950	S05, T90.4
9. Amputations		
Thumb	885	S68.0
Finger	886	S68.1/2
Arm	887	S48, S58, S68.3-9, T05.0/2, T11.6
Toe[h]	895	S98.1/2
Foot[h]	896, 897.0–1	S98.0/3/4, T05.3
Leg[h]	897.2–3	S78, S88, T05.4/6, T13.6
10. Crushing	925–929	S07, S17, S28, S38, S47, S57, S67, S77, S87, S97, T04, T14.7, T92.6, T93.6
11. Burns		
Less than 20%—short-term[i]	940-947, 948.0–1	T31.0/1
Less than 20%—long-term[i]	940-947, 948.0–1	T31.0/1
20 to 60%—short-term[i]	948.2–5	T331.2/5

(Continues on the following page.)

Table 3A.5 Continued

GBD cause/sequela	ICD-9 code	ICD-10 code
20 to 60%—long-term[i]	948.2–5	T331.2/5
Greater than 60%—short-term[i]	948.6–9	T31.6/9
Greater than 60%—long-term[i]	948.6–9	T31.6/9
12. Injured nerves		
Short-term	951, 953–957	S04, S44, S54, S64, S74, S84, S94, T06.2, T11.3, T13.3, T14.4
Long-term	951, 953–957	S04, S44, S54, S64, S74, S84, S94, T06.2, T11.3, T13.3, T14.4
13. Poisoning	960–979, 980–989	T36–T65, T96–T97

Source: Authors' compilation.

a. Version 0 estimates for YLD are based on epidemiological reviews and disease models from the GBD 1990, adjusted for time trends and internal consistency with 2001 population estimates, and cause-specific and background mortality for 2001. Version 1 estimates for YLD are provisional revised estimates based on new epidemiological reviews and disease models for 2001. These estimates may change with further revisions. Version 2 estimates for YLD are final estimates based on new epidemiological reviews and disease models for 2001. YLL for all causes are based on complete analysis of available mortality data for years up to and including 2002.

b. DSM IV is the *Diagnostic and Statistical Manual of Mental Disorders—Fourth Edition* (Washington, DC: American Psychiatric Association, C., 1994).

c. See table 3A.2 for ICD-9 and ICD-10 definitions.

d. The N-codes 803 and 804 were assigned to fractured skull following the distribution of N-codes 801 and 802.

e. The N-code 809 was assigned to fractured rib, sternum, and pelvis following the distribution of N-codes 807 and 808.

f. The N-codes 818 and 819 were assigned to fractured clavicle, scapula, humerus, radius, ulna, and hand bones following the distribution of N-codes 810–817.

g. The N-codes 827 and 828 were assigned to fractured patella, tibia, fibula, ankle, and foot bones following the distribution of N-codes 822–826.

h. The N-codes 897.4–897.7 were assigned to amputated toe, foot, and leg following the distribution of N-codes 895, 896, and 897.0–897.3.

i. The N-code 949 was assigned to bums following the N-codes 940–948. In ICD-10, burns are classified by site (T20–T30) and/or proportion of body surface affected (T31).

Table 3A.6 Disability Weights for Diseases and Conditions (Except Cancers and Injuries)

Sequela	Average disability weight[a]	Range[b]	Source
Tuberculosis—cases	0.271	0.264–0.294	GBD 1990[c], varies with age
Syphilis			
Congenital syphilis	0.315		GBD 1990
Primary	0.015	0.014–0.015	GBD 1990[c], varies with age
Secondary	0.048	0.044–0.048	GBD 1990[c], varies with age
Tertiary—neurologic	0.283		GBD 1990
Chlamydia			
Cervicitis	0.049		GBD 1990
Neonatal pneumonia	0.280		GBD 1990
Ophthalmia neonatorum	0.180		GBD 1990
Pelvic inflammatory disease	0.327	0.194–0.382	GBD 1990[c]: untreated 0.420, treated 0.169
Ectopic pregnancy	0.549		GBD 1990
Tubo-ovarian abscess	0.548		GBD 1990
Chronic pelvic pain	0.122		GBD 1990
Infertility	0.180		GBD 1990
Symptomatic urethritis	0.067		GBD 1990
Epididymitis	0.167		GBD 1990
Gonorrhea			
Cervicitis	0.049		GBD 1990
Corneal scar—blindness	0.600		GBD 1990
Ophthalmia neonatorum	0.180		GBD 1990
Pelvic inflammatory disease	0.169		GBD 1990
Ectopic pregnancy	0.549		GBD 1990
Tubo-ovarian abscess	0.548		GBD 1990
Chronic pelvic pain	0.122		GBD 1990
Infertility	0.180		GBD 1990
Symptomatic urethritis	0.067		GBD 1990
Epididymitis	0.167		GBD 1990
Corneal scar—low vision	0.233	0.233–0.245	GBD 1990[c], varies with age
Stricture	0.151		GBD 1990
HIV/AIDS			
HIV cases	0.135	0.123–0.136	GBD 1990[c], varies with age
AIDS cases	0.505		GBD 1990
Diarrheal diseases—episodes	0.105	0.086–0.119	GBD 1990[c], varies with age
Pertussis			
Episodes	0.129	0.016–0.160	GBD 1990
Encephalopathy	0.450	0.402–0.484	GBD 1990[c], varies with age and treatment
Poliomyelitis—cases—lameness	0.369		GBD 1990
Diphtheria			
Episodes	0.231		GBD 1990
Neurological complications	0.078		GBD 1990
Myocarditis	0.323		GBD 1990
Measles—episodes	0.152		GBD 1990
Tetanus—episodes	0.633	0.604–0.640	GBD 1990[c], varies with age
Meningitis			
Streptococcus pneumoniae—episodes	0.615	0.613–0.616	GBD 1990[c], varies with age
Haemophilus influenzae—episodes	0.616	0.613–0.616	GBD 1990[c], varies with age
Neisseria meningitidis—episodes	0.615	0.613–0.616	GBD 1990[c], varies with age
Meningococcaemia without meningitis—episodes	0.152		GBD 1990
Deafness	0.229	0.213–0.233	GBD 1990[c], varies with age and treatment
Mental retardation	0.456	0.402–0.484	GBD 1990[c], varies with age and treatment
Motor deficit	0.380	0.339–0.460	GBD 1990[c], varies with age and treatment
Seizure disorder	0.097	0.046–0.142	GBD 1990[c], varies with age and treatment
Hepatitis B—episodes	0.211	0.170–0.212	GBD 1990[c], varies with age
Hepatitis C—episodes	0.211	0.170–0.212	GBD 1990[c], varies with age

(Continues on the following page.)

Table 3A.6 Continued

Sequela	Average disability weight[a]	Range[b]	Source
Malaria			
Episodes	0.191	0.172–0.211	GBD 1990[c], varies with age and treatment
Neurological sequelae	0.471	0.443–0.471	GBD 1990[c], varies with age and treatment
Anemia	0.012	0.012–0.013	GBD 1990[c], varies with age
Trypanosomiasis—episodes	0.350		GBD 1990
Chagas' disease			
Infection	0.000		GBD 1990
Cardiomyopathy without congestive heart failure	0.062		GBD 1990
Cardiomyopathy with congestive heart failure	0.270	0.186–0.308	GBD 1990[c]: untreated 0.323, treated 0.171
Megaviscera	0.240		GBD 1990
Schistosomiasis—infection	0.006	0.005–0.006	GBD 1990[c], varies with age
Leishmaniasis			
Visceral	0.243		GBD 1990
Cutaneous	0.023		GBD 1990
Lymphatic filariasis			
Hydrocele $>$ 15 cm	0.073	0.066–0.075	GBD 1990[c], varies with age
Bancroftian lymphedema	0.106	0.067–0.128	GBD 1990[c], varies with age
Brugian lymphedema	0.116	0.064–0.128	GBD 1990[c], varies with age
Onchocerciasis			
Blindness	0.600		GBD 1990
Itching	0.068		GBD 1990
Low vision	0.260		GBD 1990[d]
Leprosy			
Cases	0.000		GBD 1990
Disabling leprosy	0.152		GBD 1990
Dengue—dengue hemorrhagic fever	0.210	0.195–0.211	GBD 1990[c], varies with age
Japanese encephalitis			
Episodes	0.616	0.613–0.616	GBD 1990[c], varies with age
Cognitive impairment	0.468	0.402–0.484	GBD 1990[c], varies with age and treatment
Neurological sequelae	0.380	0.339–0.460	GBD 1990[c], varies with age and treatment
Trachoma			
Blindness	0.600		GBD 1990
Low vision	0.278	0.227–0.282	GBD 1990[d]: untreated 0.282, treated 0.227
Ascariasis			
High-intensity infection	0.000		GBD 1990
Contemporaneous cognitive deficit	0.006		GBD 1990
Cognitive impairment	0.463		GBD 1990
Intestinal obstruction	0.024		GBD 1990
Trichuriasis			
High-intensity infection	0.000		GBD 1990
Contemporaneous cognitive deficit	0.006		GBD 1990
Massive dysentery syndrome	0.116	0.114–0.138	GBD 1990[c], varies with age
Cognitive impairment	0.024		GBD 1990
Hookworm disease (ancylostomiasis and necatoriasis)			
High-intensity infection	0.000		GBD 1990
Anemia	0.024		GBD 1990
Cognitive impairment	0.024		GBD 1990
Lower respiratory infections			
Episodes	0.279		GBD 1990
Chronic sequelae	0.099		GBD 1990
Upper respiratory infections			
Episodes	0.000		GBD 1990
Pharyngitis	0.070		GBD 1990
Otitis media			
Episodes	0.023		GBD 1990
Deafness	0.229	0.213–0.233	GBD 1990[c], varies with age and treatment

Table 3A.6 Continued

Sequela	Average disability weight[a]	Range[b]	Source
Maternal hemorrhage			
Episodes	0.000		GBD 1990
Severe anemia	0.093	0.087–0.093	GBD 1990[c], varies with age
Maternal sepsis			
Episodes	0.000		GBD 1990
Infertility	0.180		GBD 1990
Hypertensive disorders of pregnancy—episodes	0.000		GBD 1990
Obstructed labor			
Episodes	0.000		GBD 1990
Cesarean section for obstructed labor	0.349		GBD 1990
Stress incontinence	0.025		GBD 1990
Rectovaginal fistula	0.430		GBD 1990
Abortion			
Episodes	0.000		GBD 1990
Infertility	0.180		GBD 1990
Reproductive tract infection	0.067		GBD 1990
Other maternal conditions			
Stress incontinence	0.025		GBD 1990
Low birthweight—all sequelae	0.106		GBD 1990
Birth asphyxia and birth trauma—all sequelae	0.372	0.343–0.379	GBD 1990[c]: untreated 0.381, treated 0.334
Protein-energy malnutrition			
Wasting	0.053		GBD 1990
Stunting	0.002		GBD 1990
Developmental disability	0.024		GBD 1990
Iodine deficiency			
Goiter grades 1 and 2	0.000		GBD 1990
Mild developmental disability	0.006		GBD 1990
Cretinoidism	0.255		GBD 1990
Cretinism	0.804		GBD 1990
Vitamin A deficiency			
Xerophthalmia	0.000		GBD 1990
Corneal scar	0.276	0.274–0.282	GBD 1990[c], varies with age
Iron-deficiency anemia			
Mild	0.000		GBD 1990
Moderate	0.011	0.011–0.012	GBD 1990[c], varies with age
Severe	0.090	0.087–0.093	GBD 1990[c], varies with age
Cognitive impairment	0.024		GBD 1990
Diabetes mellitus			
Cases	0.015	0.012–0.018	GBD 1990[c]: untreated 0.012, treated 0.033
Diabetic foot	0.133	0.130–0.136	GBD 1990[c]: untreated 0.137, treated 0.129
Neuropathy	0.072	0.066–0.076	GBD 1990[c]: untreated 0.078, treated 0.064
Retinopathy—blindness	0.550	0.511–0.595	GBD 1990[c]: untreated 0.600, treated 0.493
Amputation	0.102	0.086–0.151	GBD 1990[c]: untreated 0.155, treated 0.068
Unipolar depressive disorders			
Mild episode	0.140		Netherlands study[e]
Moderate episode	0.350		Netherlands study[e]
Severe episode	0.760		Netherlands study[e]
Dysthymia	0.140		Netherlands study[e]
Bipolar affective disorder—cases	0.367	0.309–0.387	Untreated 0.400, treated 0.140
Schizophrenia—cases	0.528	0.406–0.572	GBD 1990[c], varies with age and treatment
Epilepsy—cases	0.113	0.052–0.142	GBD 1990[c], varies with age and treatment
Alcohol use disorders—cases	0.155		[d]
Alzheimer's disease and other dementias—cases	0.666	0.627–0.667	GBD 1990[c], varies with age

(Continues on the following page.)

Table 3A.6 Continued

Sequela	Average disability weight[a]	Range[b]	Source
Parkinson's disease—cases	0.351	0.324–0.395	GBD 1990[c], varies with age and treatment
Multiple sclerosis—cases	0.411	0.410–0.437	GBD 1990[c], varies with age
Drug use disorders—cases	0.252		GBD 1990
Post-traumatic stress disorder—cases	0.105		GBD 1990
Obsessive-compulsive disorder—cases	0.127	0.122–0.129	GBD 1990[c]: untreated 0.129, treated 0.080
Panic disorder—cases	0.165	0.153–0.171	GBD 1990[c]: untreated 0.173, treated 0.091
Insomnia (primary)—cases	0.100		[f]
Migraine—cases	0.029	0.025–0.030	[f]
Mild mental retardation, lead-caused—cases	0.361		Netherlands study[e]
Glaucoma			
Low vision	0.247	0.227–0.282	GBD 1990[d]: untreated 0.282, treated 0.227
Blindness	0.600		GBD 1990
Cataracts			
Low vision	0.271	0.234–0.280	GBD 1990[d]: untreated 0.282, treated 0.227
Blindness	0.568	0.511–0.595	GBD 1990[c]: untreated 0.600, treated 0.488
Vision disorders, age-related and other			
Low vision	0.263	0.227–0.282	GBD 1990[d]: untreated 0.282, treated 0.227
Blindness	0.600		GBD 1990
Hearing loss, adult onset			
Mild	0.000		Assumed to have no disability for GBD
Moderate, treated	0.040		Assumed similar to mild hearing loss[f]
Moderate, untreated	0.120		Netherlands study[e]
Severe or profound, treated	0.120		Assumed similar to moderate loss[f]
Severe or profound, untreated	0.333		GBD 1990 deafness weight[c]
Rheumatic heart disease—cases	0.253	0.186–0.300	GBD 1990[c]: untreated 0.323, treated 0.171
Hypertensive heart disease—cases	0.243	0.201–0.300	[f]: untreated 0.323, treated 0.171
Ischemic heart disease			
Acute myocardial infarction	0.437	0.405–0.477	GBD 1990[c]: untreated 0.491, treated 0.395
Angina pectoris	0.137	0.108–0.207	GBD 1990[c]: untreated 0.227, treated 0.095
Congestive heart failure	0.234	0.186–0.300	GBD 1990[c]: untreated 0.323, treated 0.171
Cerebrovascular disease			
First-ever stroke cases	0.920		[f]
Long-term stroke survivors	0.270	0.228–0.295	[d], varies with age and treatment
Inflammatory heart disease—all sequelae	0.252	0.201–0.300	GBD 1990[c]: untreated 0.323, treated 0.171
Chronic obstructive pulmonary disease			
Mild and moderate symptomatic cases	0.170		Netherlands study[e]
Severe symptomatic cases	0.530		Netherlands study[e]
Asthma—cases	0.043	0.036–0.050	[f]: untreated 0.054, treated 0.043
Peptic ulcer disease			[f]
Cases with antibiotic treatment	0.003		GBD 1990
Cases not treated with antibiotic	0.115		GBD 1990
Cirrhosis of the liver—symptomatic cases	0.330		GBD 1990
Appendicitis—episodes	0.463		GBD 1990
Nephritis and nephrosis			
Acute glomerulonephritis	0.091	0.082–0.104	GBD 1990[c], varies with age and treatment
End-stage renal disease	0.098	0.087–0.107	GBD 1990[c], varies with age and treatment
Benign prostatic hypertrophy—symptomatic cases	0.038		GBD 1990
Skin diseases—cases	0.056		[f]
Rheumatoid arthritis—cases	0.199	0.185–0.221	GBD 1990[c]: untreated 0.233, treated 0.174
Osteoarthritis			
Hip	0.126	0.118–0.147	GBD 1990[c]: untreated 0.156, treated 0.108
Knee	0.129	0.118–0.147	GBD 1990[c]: untreated 0.156, treated 0.108
Gout—cases	0.132	0.061–0.189	[f]

Table 3A.6 Continued

Sequela	Average disability weight[a]	Range[b]	Source
Low back pain			
Episode of limiting low back pain	0.061		[e]
Acute intervertebral disc disorder	0.061		[f]
Chronic intervertebral disc disorder	0.121	0.103–0.125	[f]
Abdominal wall defect—cases	0.850		GBD 1990
Anencephaly—cases	0.850		GBD 1990
Anorectal atresia—cases	0.850		GBD 1990
Cleft lip—cases	0.049	0.002–0.082	GBD 1990[c]: untreated 0.016, treated 0.098
Cleft palate—cases	0.101	0.036–0.187	GBD 1990[c]: untreated 0.015, treated 0.231
Esophageal atresia—cases	0.850		GBD 1990
Renal agenesis—cases	0.850		GBD 1990
Down syndrome—cases	0.593		GBD 1990
Congenital heart anomalies—cases	0.323		GBD 1990
Spina bifida—cases	0.593		GBD 1990
Dental caries—episodes	0.081		GBD 1990
Periodontal disease—cases	0.001		GBD 1990
Edentulism—cases	0.020	0.007–0.052	GBD 1990[c]: untreated 0.062, treated 0.001

Source: Authors' compilation.

a. Global average disability weight.

b. Minimum and maximum disability weights if there is variation across age-sex-region categories. For disability weights based on the GBD 1990 study, further details of age-sex variation, treated and untreated weights, are given in annex tables 3 and 4 of Murray and Lopez 1996a.

c. Disability weights from GBD 1990 (Murray and Lopez 1996a).

d. Disability weights based on GBD 1990 (Murray and Lopez 1996a) with some revisions.

e. Disability weights drawn from Netherlands disability weights study (Stouthard and others 1997).

f. Provisional disability weights based on GBD 1990 or Netherlands weights for comparable health states.

Table 3A.7 Disability Weights for Malignant Neoplasms and Their Long-Term Sequelae

Site	Stage			Mortality stratum (for WHO subregions)			
	Diagnosis/ therapy	Control	Long-term sequela	A	B	C	D/E
Mouth and oropharynx	0.09	0.09					
Esophagus	0.20	0.20					
Stomach	0.20	0.20					
Colon and rectum	0.20	0.20	Stoma	0.09	0.09	0.06	0.02
Liver	0.20	0.20					
Pancreas	0.20	0.20					
Trachea, bronchus, and lung	0.15	0.15					
Melanoma and other skin	0.05	0.05					
Breast	0.09	0.09	Mastectomy	0.03	0.05	0.06	0.08
Cervix uteri	0.08	0.08	Infertility/incontinence	0.04	0.11	0.13	0.17
Corpus uteri	0.10	0.10	Infertility/incontinence	0.18	0.18	0.18	0.18
Ovary	0.10	0.10	Infertility/incontinence	0.18	0.18	0.18	0.18
Prostate	0.13	0.13	Impotence/incontinence	0.06	0.06	0.06	0.06
Bladder	0.09	0.09					
Non-Hodgkin's lymphoma	0.06	0.06					
Hodgkin's lymphoma	0.06	0.06					
Leukemia	0.09	0.09					
Other	0.09	0.09					

Sources: Mathers, Vos, and Stevenson 1999; Stouthard and others 1997.
Note: For all cancer sites, the disability weight is 0.75 for the preterminal metastasis stage, and 0.81 in the terminal stage. For definitions of the mortality strata, see WHO 2002e.

Table 3A.8 Disability Weights for Injuries

Injury category	Short-term weight		Long-term weight	
	Treated	Untreated	Treated	Untreated
Fractured skull	0.431	0.431		
Ages 0–44			0.350	0.410
Ages 45–59			0.350	0.419
Ages 60+			0.404	0.471
Intracranial injuries	0.359	0.359		
Ages 0–44			0.350	0.410
Ages 45–59			0.350	0.419
Ages 60+			0.404	0.471
Fracture				
Face bones	0.223	0.223		
Vertebral column	0.266	0.266		
Rib or sternum	0.199	0.199		
Pelvis	0.247	0.247		
Clavicle, scapula, or humerus	0.153	0.153		
Ulna or radius	0.180	0.180		
Hand bones	0.100	0.100		
Femur	0.372	0.372	0.272	0.272
Patella, tibia, or fibula	0.271	0.271		
Ankle	0.196	0.196		
Foot bones	0.077	0.077		
Injured spinal cord			0.725	0.725
Dislocation of shoulder, elbow, or hip	0.074	0.074		
Other dislocation	0.074	0.074		
Sprains	0.064	0.064		
Amputation				
Thumb			0.165	0.165
Finger			0.102	0.102
Arm			0.257	0.308
Toe			0.102	0.102
Foot			0.300	0.300
Leg			0.300	0.300
Internal injuries	0.208	0.208		
Open wound	0.108	0.108		
Injury to eyes	0.108	0.108	0.300	0.354
Crushing	0.218	0.218		
Burns				
< 20%	0.158	0.156	0.001	0.002
> 20% and < 60%	0.441	0.469	0.255	0.255
> 60%	0.441	0.469	0.255	0.255
Injured nerves	0.064	0.078	0.064	0.078
Poisoning				
Ages 0–14	0.611	0.611		
Ages 14+	0.608	0.608		

Source: Murray and Lopez 1996a.

ANNEX 3B: Deaths by Cause, Sex, Age, and Region, 2001

Table 3B.1 Deaths by Cause, Sex, and Age in Low- and Middle-Income Countries, 2001
(thousands)

		Male								
Cause	**Total**	**0–4**	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
Population (millions)	*5,219*	*288*	*563*	*712*	*545*	*326*	*124*	*61*	*15*	*2,636*
All causes	**48,351**	**5,407**	**733**	**1,835**	**2,786**	**3,998**	**4,069**	**4,376**	**2,349**	**25,554**
I. Communicable, maternal, perinatal, and nutritional conditions	***17,613***	***4,837***	***375***	***585***	***1,150***	***853***	***529***	***469***	***268***	***9,068***
A. Infectious and parasitic diseases	**10,686**	**2,360**	**295**	**539**	**1,085**	**734**	**348**	**249**	**111**	**5,724**
1. **Tuberculosis**	**1,590**	**22**	**16**	**138**	**256**	**281**	**184**	**115**	**31**	**1,043**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**176**	**31**	**0**	**2**	**11**	**26**	**10**	**6**	**3**	**89**
a. Syphilis	155	30	0	1	10	23	10	6	3	83
b. Chlamydia	9	—	—	—	—	—	—	—	—	—
c. Gonorrhea	1	—	0	0	0	0	0	0	0	0
d. Other sexually transmitted diseases	12	1	0	0	1	4	0	0	0	6
3. **HIV/AIDS**	**2,552**	**173**	**52**	**258**	**640**	**221**	**29**	**4**	**0**	**1,377**
4. **Diarrheal diseases**	**1,777**	**837**	**3**	**6**	**11**	**15**	**15**	**19**	**23**	**930**
5. **Childhood-cluster diseases**	**1,362**	**524**	**109**	**24**	**11**	**6**	**3**	**1**	**1**	**679**
a. Pertussis	301	150	0	—	—	—	0	—	—	150
b. Poliomyelitis[a]	0	0	0	0	0	0	0	0	0	0
c. Diphtheria	6	3	0	0	0	0	0	0	0	3
d. Measles	762	277	91	11	0	0	0	—	—	379
e. Tetanus	293	94	18	13	11	6	3	1	1	147
6. **Meningitis**	**169**	**29**	**14**	**11**	**9**	**10**	**5**	**6**	**3**	**87**
7. **Hepatitis B[b]**	**95**	**3**	**4**	**8**	**16**	**22**	**7**	**4**	**2**	**66**
Hepatitis C[b]	**39**	**1**	**1**	**3**	**7**	**9**	**3**	**2**	**1**	**27**
8. **Malaria**	**1,207**	**521**	**7**	**10**	**11**	**11**	**7**	**7**	**4**	**579**
9. **Tropical-cluster diseases**	**128**	**4**	**21**	**15**	**13**	**13**	**7**	**4**	**1**	**78**
a. Trypanosomiasis	48	2	11	6	6	5	1	0	0	31
b. Chagas' disease	14	0	0	0	1	2	2	1	1	8
c. Schistosomiasis	14	0	0	0	1	3	3	2	0	9
d. Leishmaniasis	51	2	10	8	5	3	1	1	0	30
e. Lymphatic filariasis	0	0	0	0	0	0	0	0	0	0
f. Onchocerciasis	0	0	—	—	—	—	—	—	—	0
10. **Leprosy**	**6**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**4**
11. **Dengue**	**19**	**2**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
12. **Japanese encephalitis**	**14**	**2**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**7**
13. **Trachoma**	**0**	**0**	**0**	**0**	**—**	**0**	**—**	**0**	**—**	**0**
14. **Intestinal nematode infections**	**12**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**6**
a. Ascariasis	3	0	1	0	0	0	0	0	0	1
b. Trichuriasis	3	0	1	0	0	0	0	0	0	2
c. Hookworm disease	3	0	0	0	0	0	0	0	0	2
Other intestinal infections	2	1	0	0	0	0	0	0	0	1
Other infectious diseases	1,540	210	59	62	97	117	76	80	42	744
B. Respiratory infections	**3,481**	**1,003**	**58**	**37**	**54**	**94**	**168**	**203**	**145**	**1,761**
1. Lower respiratory infections	3,408	989	55	35	51	90	163	198	141	1,724
2. Upper respiratory infections	69	14	2	2	2	4	5	5	3	35
3. Otitis media	3	0	1	0	0	0	0	0	0	2
C. Maternal conditions	**507**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	141	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	75	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	71	—	—	—	—	—	—	—	—	—
4. Obstructed labor	43	—	—	—	—	—	—	—	—	—
5. Abortion	66	—	—	—	—	—	—	—	—	—
Other maternal conditions	111	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**2,489**	**1,381**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**1,381**
1. Low birthweight	1,291	704	0	—	0	—	0	—	—	704
2. Birth asphyxia and birth trauma	728	426	0	0	0	0	—	—	—	426
Other perinatal conditions	470	251	0	0	0	0	—	0	—	251
E. Nutritional deficiencies	**450**	**93**	**22**	**9**	**10**	**25**	**13**	**16**	**13**	**201**
1. Protein-energy malnutrition	241	70	15	4	3	6	7	8	7	121
2. Iodine deficiency	7	2	1	0	0	0	0	0	0	3
3. Vitamin A deficiency	23	7	2	0	0	1	0	0	0	11
4. Iron-deficiency anemia	126	9	3	4	6	15	2	2	2	43
Other nutritional disorders	54	5	1	1	1	3	3	6	3	23

Table 3B.1 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
274	*533*	*682*	*530*	*326*	*136*	*78*	*25*	*2,583*
5,123	**738**	**1,576**	**1,831**	**2,521**	**2,960**	**4,319**	**3,729**	**22,797**
4,555	***451***	***950***	***959***	***512***	***358***	***408***	***353***	***8,546***
2,406	**347**	**628**	**666**	**400**	**205**	**191**	**118**	**4,962**
18	**16**	**106**	**135**	**117**	**79**	**56**	**19**	**547**
37	**0**	**13**	**10**	**14**	**7**	**4**	**1**	**87**
37	0	12	8	6	4	4	1	72
—	—	0	1	6	1	0	0	9
0	—	0	0	0	0	0	0	1
0	0	0	1	2	1	0	0	6
166	**51**	**384**	**423**	**128**	**20**	**4**	**0**	**1,175**
762	**3**	**3**	**5**	**10**	**14**	**20**	**30**	**847**
525	**111**	**24**	**11**	**6**	**3**	**1**	**1**	**682**
151	0	0	—	0	0	—	—	151
0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	3
279	93	11	—	0	0	—	—	383
93	18	13	11	6	3	1	1	146
35	**18**	**9**	**5**	**5**	**4**	**4**	**2**	**82**
5	**2**	**5**	**4**	**6**	**3**	**2**	**2**	**29**
2	**1**	**2**	**2**	**3**	**1**	**1**	**1**	**12**
566	**8**	**12**	**12**	**13**	**8**	**7**	**4**	**629**
4	**15**	**10**	**6**	**7**	**4**	**3**	**2**	**50**
1	6	4	3	3	0	0	—	17
0	0	0	1	2	1	1	1	7
0	0	0	0	1	1	2	1	5
3	8	5	1	1	1	0	0	21
0	0	0	0	0	0	0	0	0
—	—	0	—	—	0	—	—	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
2	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**10**
4	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**7**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
2	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
1	1	0	0	0	0	0	0	2
0	1	0	0	0	0	0	0	1
—	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
277	113	59	53	90	62	87	55	796
939	**78**	**57**	**44**	**57**	**131**	**197**	**215**	**1,719**
924	73	56	44	57	128	194	209	1,684
15	5	1	1	1	3	3	6	34
0	0	0	0	0	0	0	0	1
0	**0**	**257**	**232**	**18**	**0**	**0**	**0**	**507**
0	0	63	71	7	—	—	—	141
—	0	37	35	4	—	—	—	75
—	0	41	28	2	—	—	0	71
—	—	26	17	0	—	—	—	43
—	0	44	22	0	—	—	—	66
—	0	46	59	5	0	0	0	111
1,109	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,109**
587	0	—	—	—	—	—	—	587
302	0	0	—	0	—	0	0	302
219	0	0	0	0	0	0	0	219
101	**25**	**8**	**16**	**37**	**22**	**20**	**20**	**249**
69	17	2	3	5	7	7	10	119
3	0	0	0	0	0	0	0	3
9	2	0	0	0	0	0	0	12
11	5	5	13	30	12	4	4	83
9	1	0	0	2	3	8	6	31

(Continues on the following page.)

Table 3B.1 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***26,023***	***416***	***116***	***339***	***834***	***2,575***	***3,290***	***3,743***	***2,006***	***13,317***
A. Malignant neoplasms	**4,955**	**18**	**25**	**68**	**186**	**671**	**834**	**708**	**250**	**2,762**
1. Mouth and oropharynx cancers	271	0	0	4	16	54	62	37	13	187
2. Esophageal cancer	380	0	0	1	13	59	84	62	17	235
3. Stomach cancer	696	0	0	4	25	110	131	117	42	429
4. Colon and rectal cancers	357	0	0	4	15	39	53	52	22	185
5. Liver cancer	505	1	0	8	38	122	97	69	16	350
6. Pancreas cancer	117	0	0	0	4	18	19	16	6	64
7. Trachea, bronchus, and lung cancers	771	0	0	2	24	138	205	160	39	569
8. Melanoma and other skin cancers	35	0	0	1	2	4	4	4	2	17
9. Breast cancer	317	0	0	0	0	0	0	0	0	1
10. Cervix uteri cancer	218	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	44	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	86	—	—	—	—	—	—	—	—	—
13. Prostate cancer	145	0	0	0	0	9	35	65	35	145
14. Bladder cancer	117	0	0	0	2	12	24	30	14	81
15. Lymphomas and multiple myeloma	216	2	7	11	15	22	23	19	8	107
16. Leukemia	190	7	12	23	12	16	16	14	6	105
Other malignant neoplasms	490	8	5	9	22	69	80	64	29	285
B. Other neoplasms	**89**	**2**	**2**	**5**	**5**	**10**	**9**	**9**	**4**	**45**
C. Diabetes mellitus	**757**	**1**	**1**	**7**	**18**	**75**	**92**	**94**	**47**	**337**
D. Endocrine disorders	**170**	**21**	**4**	**6**	**8**	**11**	**9**	**10**	**8**	**76**
E. Neuropsychiatric conditions	**701**	**24**	**16**	**42**	**76**	**69**	**36**	**82**	**53**	**398**
1. Unipolar depressive disorders	10	0	0	0	2	2	1	0	0	5
2. Bipolar affective disorder	0	0	0	0	0	0	0	0	0	0
3. Schizophrenia	21	0	0	0	3	4	1	1	0	10
4. Epilepsy	116	12	7	14	14	9	4	3	2	65
5. Alcohol use disorders	62	0	0	5	16	19	9	4	1	54
6. Alzheimer's and other dementias	173	1	0	0	1	3	4	39	28	77
7. Parkinson's disease	51	0	0	0	1	1	3	12	8	25
8. Multiple sclerosis	8	0	0	0	1	1	1	0	0	4
9. Drug use disorders	73	0	0	11	28	19	2	0	0	60
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	5	1	1	1	0	0	0	0	0	3
Other neuropsychiatric disorders	183	11	8	10	9	12	12	23	13	97
F. Sense organ diseases	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1. Glaucoma	0	0	—	0	0	0	0	0	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	3	0	0	0	0	0	0	0	0	1
G. Cardiovascular diseases	**13,354**	**38**	**24**	**103**	**320**	**1,170**	**1,670**	**2,047**	**1,168**	**6,541**
1. Rheumatic heart disease	307	7	5	18	17	28	24	22	10	131
2. Hypertensive heart disease	760	1	1	4	17	65	97	113	64	361
3. Ischemic heart disease	5,699	3	3	26	144	620	818	928	467	3,010
4. Cerebrovascular disease	4,608	7	5	21	68	328	575	758	410	2,171
5. Inflammatory heart diseases	319	7	2	9	18	31	31	38	27	163
Other cardiovascular diseases	1,661	12	7	26	56	98	126	189	191	704
H. Respiratory diseases	**3,125**	**33**	**9**	**23**	**55**	**236**	**368**	**537**	**342**	**1,604**
1. Chronic obstructive pulmonary disease	2,378	2	0	2	16	167	297	449	275	1,209
2. Asthma	205	2	4	10	18	29	19	17	7	106
Other respiratory diseases	542	29	5	11	20	40	52	71	60	289

Table 3B.1 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
419	***123***	***285***	***584***	***1,760***	***2,466***	***3,779***	***3,289***	***12,705***
19	**22**	**54**	**194**	**524**	**537**	**550**	**293**	**2,193**
0	0	1	5	20	22	21	14	84
0	0	1	5	33	41	42	22	144
0	0	3	21	52	61	80	50	266
0	0	2	13	32	42	50	34	172
1	1	5	15	36	39	41	16	154
0	0	0	3	10	14	17	9	53
0	1	1	11	46	58	64	21	203
0	0	0	2	3	4	5	3	18
0	0	2	44	108	74	57	31	316
0	0	11	19	68	59	44	17	218
0	0	0	3	10	12	12	6	44
0	1	3	9	24	22	19	8	86
—	—	—	—	—	—	—	—	—
1	0	0	3	5	8	10	8	35
3	6	8	12	19	23	25	14	109
8	9	12	12	14	12	12	7	85
6	4	5	17	42	46	51	34	204
2	**2**	**3**	**5**	**11**	**8**	**8**	**5**	**44**
2	**2**	**6**	**14**	**76**	**121**	**133**	**67**	**421**
22	**3**	**7**	**10**	**11**	**12**	**14**	**14**	**94**
19	**15**	**23**	**27**	**34**	**25**	**81**	**78**	**303**
0	0	0	1	3	1	0	0	5
0	0	0	0	0	0	0	0	0
0	0	0	2	4	2	2	1	10
9	8	12	8	6	3	3	2	51
0	0	0	2	3	2	1	0	8
1	0	1	1	2	5	40	47	96
0	0	0	0	1	2	11	11	26
0	0	0	1	2	1	1	0	5
—	0	2	6	4	0	0	0	13
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	1	1	0	0	0	0	0	2
8	6	7	6	9	10	24	16	86
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	—	—	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	1
45	**26**	**91**	**192**	**723**	**1,312**	**2,274**	**2,150**	**6,814**
8	8	19	21	35	31	35	18	175
1	1	3	12	52	85	132	114	399
2	2	27	68	290	581	911	808	2,689
5	5	13	45	238	463	869	799	2,437
6	3	6	9	20	24	43	45	156
23	8	24	36	88	127	284	366	957
30	**9**	**22**	**44**	**173**	**249**	**483**	**512**	**1,521**
2	0	1	13	122	199	411	421	1,169
2	4	12	19	26	14	13	10	99
26	5	9	12	25	36	58	81	252

(Continues on the following page.)

Table 3B.1 Continued

Cause	Male									
	Total	0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**1,600**	**47**	**16**	**48**	**123**	**252**	**183**	**156**	**74**	**899**
1. Peptic ulcer disease	234	3	2	7	18	40	29	28	14	140
2. Cirrhosis of the liver	654	8	4	16	63	143	94	65	21	413
3. Appendicitis	19	0	1	1	1	3	2	2	1	11
Other digestive diseases	694	37	10	23	41	66	58	61	38	335
J. Genitourinary diseases	**676**	**11**	**7**	**21**	**35**	**70**	**79**	**87**	**53**	**363**
1. Nephritis and nephrosis	552	9	6	19	31	58	61	64	37	285
2. Benign prostatic hypertrophy	29	—	—	0	0	5	6	10	7	29
Other genitourinary system diseases	96	2	1	2	4	8	11	13	8	50
K. Skin diseases	**53**	**1**	**0**	**1**	**3**	**4**	**3**	**5**	**4**	**21**
L. Musculoskeletal diseases	**60**	**1**	**1**	**2**	**2**	**4**	**4**	**6**	**4**	**24**
1. Rheumatoid arthritis	15	0	0	0	0	1	1	1	1	5
2. Osteoarthritis	2	0	0	0	0	0	0	0	0	1
3. Gout	1	0	0	0	0	0	0	0	0	1
4. Low back pain	1	0	0	0	0	0	0	0	0	1
Other musculoskeletal disorders	41	1	1	2	1	3	3	4	3	16
M. Congenital anomalies	**477**	**217**	**10**	**12**	**3**	**2**	**1**	**1**	**0**	**246**
1. Abdominal wall defect	4	2	0	0	0	0	0	0	0	2
2. Anencephaly	18	9	0	0	0	0	0	0	0	9
3. Anorectal atresia	1	1	0	0	0	0	0	0	0	1
4. Cleft lip	0	0	0	0	0	0	0	0	0	0
5. Cleft palate	1	1	0	0	0	0	0	0	0	1
6. Esophageal atresia	1	1	0	0	0	0	0	0	0	1
7. Renal agenesis	2	1	0	0	0	0	0	0	0	1
8. Down syndrome	22	8	1	2	0	0	0	0	0	11
9. Congenital heart anomalies	257	112	6	7	2	1	0	0	0	128
10. Spina bifida	24	11	0	0	0	0	0	0	0	12
Other congenital anomalies	148	73	3	3	1	1	0	0	0	82
N. Oral conditions	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1. Dental caries	0	—	—	—	—	—	—	0	0	0
2. Periodontal disease	0	—	—	0	0	0	0	0	0	0
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	1	0	0	0	0	0	0	0	0	1
III. Injuries	***4,715***	***154***	***242***	***911***	***802***	***571***	***250***	***164***	***75***	***3,169***
A. Unintentional injuries	**3,214**	**147**	**222**	**511**	**478**	**386**	**174**	**119**	**56**	**2,095**
1. Road traffic accidents	1,069	28	82	217	204	143	58	37	13	781
2. Poisonings	328	9	11	35	52	65	26	10	3	211
3. Falls	316	9	13	28	33	38	26	30	21	199
4. Fires	300	17	16	23	24	15	8	6	3	113
5. Drownings	368	33	57	66	44	30	11	7	3	252
6. Other unintentional injuries	832	50	43	141	121	95	45	29	14	539
B. Intentional injuries	**1,501**	**7**	**20**	**400**	**324**	**184**	**76**	**45**	**18**	**1,074**
1. Self-inflicted injuries	749	0	8	137	124	94	47	31	11	453
2. Violence	532	6	9	179	131	66	19	10	5	425
3. War	207	0	2	80	66	24	10	3	2	187
Other intentional injuries	12	1	0	3	3	1	1	1	0	10

Table 3B.1 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
67	**26**	**47**	**62**	**132**	**123**	**143**	**102**	**702**
3	1	4	9	18	18	22	18	94
17	8	15	24	61	50	46	20	240
0	0	1	1	2	2	2	2	9
47	17	27	28	52	53	72	63	359
9	**7**	**16**	**26**	**61**	**67**	**75**	**52**	**313**
7	6	14	22	54	58	64	43	267
—	—	—	—	—	—	—	—	—
1	1	3	4	8	9	12	9	46
1	**0**	**1**	**3**	**5**	**6**	**8**	**8**	**32**
1	**1**	**4**	**5**	**6**	**5**	**8**	**7**	**37**
0	0	0	1	2	2	4	1	10
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
1	1	4	4	4	3	4	5	25
204	**10**	**10**	**3**	**2**	**1**	**1**	**0**	**231**
2	0	0	0	0	0	0	0	2
9	0	0	0	0	0	0	0	9
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
7	1	2	0	0	0	0	0	11
112	6	6	2	1	0	0	0	128
12	0	0	0	0	0	0	0	12
60	3	1	1	1	0	0	0	66
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	—	—	—	0	—	—	0	0
—	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	1
148	***164***	***342***	***288***	***249***	***136***	***132***	***87***	***1,546***
142	**148**	**212**	**179**	**166**	**99**	**101**	**73**	**1,119**
22	48	52	57	54	25	20	9	288
7	10	16	21	26	22	10	5	117
7	8	9	9	15	13	29	28	117
23	18	66	38	19	9	10	6	187
25	31	21	13	10	6	6	4	116
59	34	48	40	41	23	26	22	293
6	**16**	**130**	**109**	**83**	**37**	**31**	**14**	**427**
0	6	98	75	57	25	23	11	296
6	9	28	28	20	9	6	2	108
0	1	4	5	5	3	1	1	20
0	0	1	0	1	0	0	0	3

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. For East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean regions, these figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994, 2000, and 2002, respectively.

b. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.2 Deaths by Cause, Sex, and Age in the East Asia and Pacific Region, 2001

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*1,849*	*80*	*175*	*244*	*224*	*136*	*51*	*25*	*6*	*942*
All causes	**13,070**	**701**	**121**	**416**	**624**	**1,182**	**1,388**	**1,619**	**895**	**6,945**
I. Communicable, maternal, perinatal, and nutritional conditions	***2,470***	***535***	***35***	***83***	***153***	***160***	***137***	***135***	***86***	***1,324***
A. Infectious and parasitic diseases	**1,299**	**196**	**25**	**70**	**139**	**132**	**102**	**88**	**37**	**790**
1. **Tuberculosis**	**534**	**2**	**3**	**29**	**64**	**82**	**82**	**65**	**19**	**347**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**9**	**1**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**4**
a. Syphilis	5	1	0	0	0	0	1	1	0	4
b. Chlamydia	1	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	—	0	0	—	—	—	—	0
d. Other sexually transmitted diseases	3	0	—	0	0	0	0	—	0	1
3. **HIV/AIDS**	**106**	**3**	**0**	**15**	**43**	**16**	**1**	**0**	**0**	**79**
4. **Diarrheal diseases**	**226**	**105**	**1**	**1**	**2**	**2**	**2**	**2**	**3**	**118**
5. **Childhood-cluster diseases**	**107**	**32**	**14**	**5**	**1**	**1**	**0**	**0**	**0**	**54**
a. Pertussis	3	2	—	—	—	—	—	—	—	2
b. Poliomyelitis[a]	0	0	—	—	—	—	—	—	—	0
c. Diphtheria	1	0	0	0	0	0	0	—	0	0
d. Measles	76	22	12	3	—	—	—	—	—	38
e. Tetanus	27	8	2	1	1	1	0	0	0	14
6. **Meningitis**	**33**	**7**	**1**	**3**	**2**	**2**	**1**	**1**	**1**	**16**
7. **Hepatitis B[b]**	**32**	**1**	**0**	**3**	**7**	**11**	**3**	**1**	**1**	**26**
Hepatitis C[b]	**13**	**0**	**0**	**1**	**3**	**5**	**1**	**0**	**0**	**11**
8. **Malaria**	**30**	**18**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**
9. **Tropical-cluster diseases**	**5**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**4**
a. Trypanosomiasis	—	—	—	—	—	—	—	—	—	—
b. Chagas' disease	0	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	3	—	0	0	0	1	1	0	0	3
d. Leishmaniasis	2	0	0	0	0	0	0	0	—	1
e. Lymphatic filariasis	0	0	—	0	0	0	0	—	0	0
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**2**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**
11. **Dengue**	**8**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
12. **Japanese encephalitis**	**4**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
13. **Trachoma**	**0**	**0**	**—**	**0**	**—**	**0**	**—**	**0**	**—**	**0**
14. **Intestinal nematode infections**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
a. Ascariasis	1	0	0	—	—	0	—	0	—	0
b. Trichuriasis	0	0	0	—	—	—	—	—	—	0
c. Hookworm disease	0	—	—	0	0	0	0	0	0	0
Other intestinal infections	1	0	0	0	0	0	0	0	0	0
Other infectious diseases	190	24	3	13	16	11	8	15	12	102
B. Respiratory infections	**571**	**68**	**8**	**10**	**11**	**25**	**33**	**45**	**48**	**248**
1. Lower respiratory infections	544	63	8	9	10	22	32	44	46	233
2. Upper respiratory infections	27	6	0	1	1	2	2	1	2	14
3. Otitis media	1	0	0	0	0	0	0	0	0	1
C. Maternal conditions	**37**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	12	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	3	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	5	—	—	—	—	—	—	—	—	—
4. Obstructed labor	2	—	—	—	—	—	—	—	—	—
5. Abortion	5	—	—	—	—	—	—	—	—	—
Other maternal conditions	10	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**502**	**262**	**0**	**—**	**—**	**—**	**—**	**—**	**—**	**262**
1. Low birthweight	193	100	—	—	—	—	—	—	—	100
2. Birth asphyxia and birth trauma	158	83	—	—	—	—	—	—	—	83
Other perinatal conditions	152	78	0	—	—	—	—	—	—	78
E. Nutritional deficiencies	**61**	**9**	**1**	**3**	**2**	**3**	**2**	**2**	**2**	**24**
1. Protein-energy malnutrition	27	7	1	1	1	1	1	1	1	14
2. Iodine deficiency	0	0	0	—	0	—	—	—	0	0
3. Vitamin A deficiency	0	0	0	—	0	0	—	—	—	0
4. Iron-deficiency anemia	25	1	0	1	1	2	0	0	0	6
Other nutritional disorders	9	1	0	0	0	0	0	1	1	3

Table 3B.2 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
74	*161*	*232*	*217*	*131*	*52*	*30*	*10*	*907*
697	**97**	**220**	**408**	**747**	**936**	**1,530**	**1,491**	**6,124**
542	***34***	***67***	***100***	***85***	***80***	***106***	***130***	***1,145***
168	**25**	**44**	**69**	**67**	**52**	**53**	**32**	**509**
2	**3**	**22**	**39**	**42**	**36**	**31**	**12**	**187**
0	**—**	**0**	**1**	**2**	**1**	**1**	**0**	**4**
0	—	0	0	0	0	0	0	1
—	—	—	0	1	0	—	—	1
0	—	0	0	0	—	—	—	0
0	—	0	0	1	0	0	0	2
2	**0**	**5**	**9**	**8**	**2**	**1**	**0**	**27**
95	**1**	**1**	**1**	**1**	**2**	**3**	**4**	**107**
32	**14**	**5**	**1**	**1**	**0**	**0**	**0**	**53**
2	—	—	—	—	—	—	—	2
0	—	—	—	0	—	—	—	0
0	0	0	0	0	—	—	—	0
23	12	3	—	—	—	—	—	38
7	2	1	1	1	0	0	0	13
6	**1**	**3**	**3**	**2**	**1**	**1**	**0**	**17**
1	**0**	**1**	**2**	**1**	**1**	**0**	**1**	**6**
0	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**2**
8	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	—	—	—	—	—	—	—	—
—	—	—	0	—	—	—	—	0
—	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	—	1
—	—	—	—	0	—	0	0	0
—	—	—	—	—	—	—	—	—
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
—	—	—	—	—	—	—	—	—
1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	0	0	0	—	0	—	—	0
—	0	—	—	—	—	—	—	0
—	—	0	0	0	0	0	0	0
0	0	0	0	—	0	0	0	0
18	3	7	12	8	9	17	13	87
127	**8**	**5**	**6**	**10**	**24**	**49**	**93**	**323**
122	8	5	5	10	24	48	89	311
6	0	0	0	0	0	1	5	12
0	0	0	0	0	0	—	0	0
—	**0**	**16**	**20**	**0**	**—**	**—**	**—**	**37**
—	—	5	6	0	—	—	—	12
—	—	2	2	0	—	—	—	3
—	0	2	2	0	—	—	—	5
—	—	1	1	0	—	—	—	2
—	—	3	2	0	—	—	—	5
—	—	3	6	0	—	—	—	10
241	**0**	**—**	**—**	**—**	**—**	**—**	**—**	**241**
92	0	—	—	—	—	—	—	92
74	—	—	—	—	—	—	—	74
74	—	—	—	—	—	—	—	74
6	**1**	**2**	**6**	**8**	**5**	**4**	**5**	**37**
5	1	0	1	1	1	1	2	12
0	0	—	0	—	0	—	—	0
0	0	—	—	—	—	—	—	0
1	0	2	5	7	3	1	1	19
0	0	0	0	0	1	2	2	6

(Continues on the following page.)

Table 3B.2 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***9,221***	***125***	***26***	***96***	***254***	***860***	***1,168***	***1,429***	***783***	***4,741***
A. Malignant neoplasms	**2,143**	**6**	**8**	**26**	**90**	**346**	**382**	**316**	**91**	**1,264**
1. Mouth and oropharynx cancers	66	0	0	1	5	16	12	8	2	45
2. Esophageal cancer	234	—	—	1	8	36	52	41	9	147
3. Stomach cancer	442	0	0	3	16	76	84	75	25	278
4. Colon and rectal cancers	159	0	0	2	7	20	24	22	9	83
5. Liver cancer	373	0	0	5	29	99	74	51	11	269
6. Pancreas cancer	37	0	0	0	2	7	6	5	2	22
7. Trachea, bronchus, and lung cancers	387	0	0	1	12	60	94	77	18	262
8. Melanoma and other skin cancers	5	0	0	0	0	1	1	1	0	2
9. Breast cancer	93	—	—	—	0	0	0	0	0	0
10. Cervix uteri cancer	47	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	8	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	25	—	—	—	—	—	—	—	—	—
13. Prostate cancer	16	0	0	0	0	1	4	8	3	16
14. Bladder cancer	30	0	0	0	0	2	6	9	4	21
15. Lymphomas and multiple myeloma	42	0	1	2	4	6	5	3	1	24
16. Leukemia	76	3	5	10	4	7	6	5	2	42
Other malignant neoplasms	104	2	1	1	3	15	15	12	5	54
B. Other neoplasms	**21**	**1**	**1**	**1**	**1**	**3**	**2**	**2**	**1**	**9**
C. Diabetes mellitus	**233**	**0**	**0**	**1**	**5**	**20**	**29**	**29**	**12**	**97**
D. Endocrine disorders	**61**	**9**	**1**	**2**	**2**	**3**	**2**	**3**	**3**	**25**
E. Neuropsychiatric conditions	**186**	**3**	**2**	**8**	**15**	**14**	**11**	**21**	**18**	**91**
1. Unipolar depressive disorders	1	0	0	0	0	0	0	0	0	1
2. Bipolar affective disorder	0	0	0	0	0	0	0	0	0	0
3. Schizophrenia	6	0	0	0	1	1	0	0	0	3
4. Epilepsy	24	2	1	3	4	2	1	0	0	13
5. Alcohol use disorders	12	0	0	1	3	4	2	1	0	11
6. Alzheimer's and other dementias	58	0	0	0	1	1	2	8	9	21
7. Parkinson's disease	26	0	0	0	1	0	1	5	4	11
8. Multiple sclerosis	1	0	0	0	0	0	0	0	0	0
9. Drug use disorders	7	0	0	1	3	2	0	0	0	6
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	0	0	0	0	0	0	0	0	0	0
Other neuropsychiatric disorders	50	1	1	2	2	4	5	7	4	26
F. Sense organ diseases	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	0	—	0	0	0	0	—	—	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	0	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**4,003**	**7**	**4**	**27**	**81**	**310**	**493**	**664**	**389**	**1,976**
1. Rheumatic heart disease	121	1	1	5	6	11	10	10	4	47
2. Hypertensive heart disease	333	0	0	1	7	28	47	54	29	166
3. Ischemic heart disease	1,151	1	1	8	31	104	149	189	109	591
4. Cerebrovascular disease	1,902	2	1	6	25	139	249	351	188	959
5. Inflammatory heart diseases	81	1	0	1	2	5	7	11	10	36
Other cardiovascular diseases	415	3	2	6	10	25	33	50	49	177
H. Respiratory diseases	**1,660**	**7**	**1**	**5**	**11**	**62**	**158**	**308**	**225**	**775**
1. Chronic obstructive pulmonary disease	1,415	0	0	0	2	46	136	275	191	651
2. Asthma	56	1	1	3	5	8	5	5	2	28
Other respiratory diseases	189	5	1	2	3	8	16	27	32	96

Table 3B.2 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
115	***25***	***67***	***195***	***571***	***808***	***1,375***	***1,324***	***4,479***
6	**6**	**15**	**79**	**217**	**211**	**229**	**114**	**879**
0	0	0	1	6	5	6	3	22
0	0	0	2	20	25	27	12	87
0	0	2	13	33	36	49	31	164
0	0	1	7	16	19	20	14	76
1	0	2	10	25	28	27	10	104
0	0	0	1	3	4	5	2	16
0	0	0	6	27	36	42	12	125
0	0	0	0	0	0	1	0	2
0	0	1	16	38	19	13	7	93
0	0	2	3	14	13	11	4	47
0	0	0	1	2	2	2	1	8
0	0	1	4	8	6	5	2	25
—	—	—	—	—	—	—	—	—
0	0	0	0	1	2	3	2	8
0	1	1	3	4	3	4	2	18
3	4	4	6	7	4	4	2	35
2	1	1	5	12	10	11	8	50
1	**0**	**0**	**1**	**3**	**2**	**2**	**1**	**11**
0	**0**	**1**	**5**	**23**	**39**	**46**	**22**	**136**
9	**1**	**4**	**6**	**3**	**3**	**4**	**6**	**36**
2	**2**	**5**	**7**	**9**	**9**	**24**	**38**	**95**
—	—	0	0	0	0	0	0	1
0	—	0	0	0	0	0	0	0
0	0	0	1	1	0	0	0	3
1	1	3	3	1	0	0	0	11
—	—	0	1	1	0	0	0	2
0	0	0	1	1	2	9	24	37
0	—	0	0	0	1	6	7	15
0	0	0	0	0	0	0	0	1
—	—	0	1	0	0	0	0	1
—	—	—	—	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
0	1	1	1	3	4	8	7	25
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
5	**4**	**19**	**54**	**209**	**355**	**684**	**695**	**2,027**
1	1	5	8	16	14	18	10	74
0	0	1	4	20	34	57	51	167
0	0	6	16	58	111	181	186	560
1	1	3	15	90	158	343	332	943
1	0	1	1	4	6	14	20	46
2	1	4	9	22	32	71	96	237
5	**1**	**4**	**11**	**48**	**126**	**307**	**382**	**884**
0	0	0	3	35	109	282	333	763
1	1	3	6	8	5	3	2	28
4	1	1	2	5	11	21	47	93

(Continues on the following page.)

Table 3B.2 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**514**	**28**	**3**	**13**	**35**	**76**	**60**	**53**	**27**	**294**
1. Peptic ulcer disease	94	1	0	2	5	14	13	13	6	54
2. Cirrhosis of the liver	193	1	0	4	19	44	28	21	7	126
3. Appendicitis	6	0	0	0	0	1	0	1	0	3
Other digestive diseases	220	26	2	6	10	16	18	19	13	111
J. Genitourinary diseases	**233**	**2**	**2**	**8**	**13**	**24**	**29**	**29**	**17**	**124**
1. Nephritis and nephrosis	186	1	2	8	11	20	22	20	11	94
2. Benign prostatic hypertrophy	8	—	—	—	0	1	2	3	3	8
Other genitourinary system diseases	39	1	0	1	2	3	6	5	3	21
K. Skin diseases	**9**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**4**
L. Musculoskeletal diseases	**23**	**0**	**0**	**0**	**0**	**2**	**2**	**2**	**1**	**9**
1. Rheumatoid arthritis	6	0	0	0	0	0	1	1	0	2
2. Osteoarthritis	1	0	0	0	0	0	0	0	0	0
3. Gout	1	0	0	0	0	0	0	0	0	1
4. Low back pain	0	0	0	0	0	0	0	0	0	0
Other musculoskeletal disorders	15	0	0	0	0	1	1	1	1	5
M. Congenital anomalies	**136**	**61**	**4**	**5**	**1**	**1**	**0**	**0**	**0**	**72**
1. Abdominal wall defect	0	0	—	—	0	—	—	—	0	0
2. Anencephaly	2	1	0	—	—	—	—	—	0	1
3. Anorectal atresia	—	—	—	—	—	—	—	—	—	—
4. Cleft lip	—	—	—	—	—	—	—	—	—	—
5. Cleft palate	0	0	0	0	0	—	—	—	—	0
6. Esophageal atresia	—	—	—	—	—	—	—	—	—	—
7. Renal agenesis	0	0	—	—	0	—	—	—	—	0
8. Down syndrome	1	0	0	0	0	—	—	—	—	1
9. Congenital heart anomalies	78	33	2	3	1	0	0	0	0	39
10. Spina bifida	1	1	0	—	—	0	0	—	—	1
Other congenital anomalies	52	26	1	1	0	0	0	0	0	30
N. Oral conditions	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Dental caries	—	—	—	—	—	—	—	—	—	—
2. Periodontal disease	0	—	—	—	—	—	—	—	—	—
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	0	0	0
III. Injuries	***1,379***	***41***	***60***	***237***	***217***	***162***	***82***	***55***	***25***	***880***
A. Unintentional injuries	**936**	**40**	**56**	**160**	**142**	**111**	**53**	**37**	**19**	**616**
1. Road traffic accidents	361	4	13	85	72	51	22	13	4	263
2. Poisonings	83	2	3	8	11	13	8	4	1	51
3. Falls	122	2	4	12	14	16	10	10	8	76
4. Fires	36	2	1	3	3	1	2	2	1	15
5. Drownings	144	17	28	22	9	7	4	3	2	92
6. Other unintentional injuries	189	12	8	29	32	22	8	5	3	119
B. Intentional injuries	**443**	**1**	**4**	**77**	**75**	**51**	**30**	**18**	**7**	**263**
1. Self-inflicted injuries	323	—	2	40	40	34	25	16	6	164
2. Violence	103	1	2	30	30	15	4	2	1	84
3. War	14	0	0	5	4	2	1	0	0	13
Other intentional injuries	3	0	0	1	1	0	0	0	0	2

Table 3B.2 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
31	**3**	**7**	**16**	**34**	**37**	**49**	**43**	**219**
1	0	1	4	7	8	10	9	40
2	1	2	7	17	15	16	8	68
0	0	0	0	1	0	1	1	3
28	2	4	5	10	13	22	25	109
1	**2**	**6**	**11**	**21**	**24**	**26**	**18**	**109**
1	2	5	10	18	20	21	15	91
—	—	—	—	—	—	—	—	—
0	0	1	2	3	3	5	3	18
0	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**5**
0	**0**	**1**	**2**	**2**	**2**	**3**	**3**	**14**
0	0	0	0	1	1	1	0	4
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	1	2	1	1	1	2	9
53	**4**	**3**	**2**	**1**	**0**	**0**	**0**	**64**
0	—	—	—	—	—	0	—	0
1	0	0	0	0	—	—	—	1
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	—	—	—	0
—	—	—	—	—	—	—	—	—
0	—	—	—	—	—	—	—	0
0	0	0	0	0	—	—	—	1
30	3	3	1	0	0	0	0	39
1	0	0	0	0	—	0	0	1
21	1	0	0	0	0	0	0	23
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	0	0	0	0	—	—	—	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
40	***38***	***86***	***113***	***91***	***47***	***48***	***36***	***499***
40	**35**	**45**	**61**	**52**	**27**	**31**	**28**	**319**
3	8	16	28	24	9	7	3	98
3	3	4	7	6	4	3	2	32
2	1	3	4	6	5	10	14	46
2	2	7	5	2	1	1	1	22
11	16	6	6	4	3	3	2	53
20	4	8	11	9	5	5	6	69
1	**3**	**40**	**52**	**39**	**20**	**17**	**8**	**180**
—	2	35	45	35	18	16	7	159
1	1	5	6	4	2	1	0	19
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	1

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994.

b. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.3 Deaths by Cause, Sex, and Age in the Europe and Central Asia Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*477*	*15*	*38*	*59*	*51*	*37*	*17*	*9*	*2*	*230*
All causes	**5,669**	**97**	**21**	**148**	**323**	**619**	**707**	**720**	**348**	**2,985**
I. Communicable, maternal, perinatal, and nutritional conditions	***326***	***70***	***4***	***15***	***40***	***42***	***21***	***13***	***7***	***211***
A. Infectious and parasitic diseases	**152**	**17**	**2**	**13**	**36**	**29**	**10**	**4**	**1**	**112**
1. **Tuberculosis**	**66**	**0**	**0**	**5**	**19**	**20**	**7**	**2**	**0**	**55**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Syphilis	0	0	0	0	0	0	0	0	0	0
b. Chlamydia	—	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	—	0	0	0	—	0	—	0
d. Other sexually transmitted diseases	0	0	—	0	0	0	0	0	—	0
3. **HIV/AIDS**	**28**	**0**	**0**	**5**	**13**	**5**	**1**	**0**	**0**	**24**
4. **Diarrheal diseases**	**15**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**8**
5. **Childhood-cluster diseases**	**8**	**3**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
a. Pertussis	0	0	0	—	—	—	—	—	—	0
b. Poliomyelitis[a]	0	0	0	0	0	0	0	0	0	0
c. Diphtheria	0	0	0	0	0	0	0	0	0	0
d. Measles	8	3	1	0	0	0	0	—	—	4
e. Tetanus	0	0	0	0	0	0	0	0	0	0
6. **Meningitis**	**14**	**5**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**8**
7. **Hepatitis B**[b]	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**2**
Hepatitis C[b]	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8. **Malaria**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9. **Tropical-cluster diseases**	**0**	**0**	**—**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Trypanosomiasis	0	—	—	—	—	—	—	—	—	—
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	0	0	—	0	—	0	0	0	—	0
d. Leishmaniasis	0	0	—	—	0	0	0	0	0	0
e. Lymphatic filariasis	0	0	—	0	0	—	0	—	—	0
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**0**	**—**	**—**	**—**	**0**	**0**	**0**	**0**	**0**	**0**
11. **Dengue**	**0**	**—**	**—**	**—**	**—**	**0**	**—**	**—**	**—**	**0**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
14. **Intestinal nematode infections**	**0**	**0**	**—**	**0**	**—**	**0**	**0**	**0**	**0**	**0**
a. Ascariasis	0	—	—	—	—	—	—	—	0	0
b. Trichuriasis	—	—	—	—	—	—	—	—	—	—
c. Hookworm disease	0	—	—	—	—	0	0	0	0	0
Other intestinal infections	0	0	—	0	—	—	—	—	0	0
Other infectious diseases	15	2	0	1	2	1	1	1	0	9
B. Respiratory infections	**109**	**19**	**2**	**2**	**4**	**13**	**11**	**8**	**5**	**64**
1. Lower respiratory infections	104	18	1	1	3	13	11	8	5	61
2. Upper respiratory infections	4	1	0	0	0	0	0	0	0	3
3. Otitis media	0	0	0	0	0	0	0	0	0	0
C. Maternal conditions	**3**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	1	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	0	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	0	—	—	—	—	—	—	—	—	—
4. Obstructed labor	0	—	—	—	—	—	—	—	—	—
5. Abortion	0	—	—	—	—	—	—	—	—	—
Other maternal conditions	1	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**57**	**33**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**33**
1. Low birthweight	24	13	—	—	—	—	0	—	—	13
2. Birth asphyxia and birth trauma	17	10	0	0	—	0	—	—	—	10
Other perinatal conditions	16	10	0	0	0	0	—	0	—	10
E. Nutritional deficiencies	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
1. Protein-energy malnutrition	2	0	0	0	0	0	0	0	0	1
2. Iodine deficiency	0	0	0	0	0	0	0	0	0	0
3. Vitamin A deficiency	0	—	—	—	—	—	—	—	0	0
4. Iron-deficiency anemia	3	0	0	0	0	0	0	0	0	2
Other nutritional disorders	0	0	0	0	0	0	0	0	0	0

Table 3B.3 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
14	*36*	*58*	*52*	*41*	*23*	*17*	*6*	*248*
77	**13**	**46**	**105**	**257**	**434**	**845**	**907**	**2,685**
56	***3***	***7***	***9***	***9***	***7***	***11***	***12***	***115***
15	**2**	**4**	**7**	**5**	**3**	**3**	**2**	**41**
0	**0**	**1**	**4**	**3**	**1**	**1**	**1**	**11**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	—	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	—	—	—	0	0	—	—	0
0	0	0	0	0	0	0	0	0
0	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**4**
6	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**7**
3	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
0	—	—	—	0	0	—	—	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
2	1	0	—	0	0	—	—	4
0	—	0	0	0	0	0	0	0
4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	0	—	0	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	—	0	0	—	—	0
—	—	0	0	—	0	0	0	0
—	0	—	—	—	—	—	—	0
—	—	—	—	—	—	—	—	—
—	**—**	**—**	**—**	**—**	**0**	**—**	**0**	**0**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**—**	**—**	**0**	**0**	**—**	**0**	**0**	**0**
0	—	—	—	—	—	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	0	—	—	—	—	0
0	—	—	—	0	—	0	0	0
2	0	1	1	1	1	1	1	6
16	**1**	**1**	**2**	**4**	**4**	**7**	**9**	**45**
15	1	1	2	4	4	7	9	43
1	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0
—	**0**	**2**	**1**	**0**	**0**	**—**	**—**	**3**
—	—	0	0	0	—	—	—	1
—	—	0	0	0	—	—	—	0
—	—	0	0	0	—	—	—	0
—	—	0	0	0	—	—	—	0
—	0	0	0	0	—	—	—	0
—	—	1	0	0	0	—	—	1
24	**0**	**0**	**0**	**0**	**0**	**—**	**—**	**24**
11	—	—	—	—	—	—	—	11
7	0	0	—	—	—	—	—	7
6	0	0	0	0	0	—	—	6
0	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0

(Continues on the following page.)

Table 3B.3 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***4,736***	***20***	***7***	***34***	***143***	***445***	***633***	***685***	***336***	***2,304***
A. Malignant neoplasms	**825**	**1**	**2**	**7**	**24**	**113**	**158**	**129**	**32**	**465**
1. Mouth and oropharynx cancers	27	0	0	0	1	9	7	3	1	22
2. Esophageal cancer	21	0	0	0	0	5	6	4	1	15
3. Stomach cancer	101	0	0	0	3	14	21	18	4	60
4. Colon and rectal cancers	96	0	0	0	2	8	15	17	5	47
5. Liver cancer	28	0	0	0	1	4	6	5	1	17
6. Pancreas cancer	35	0	0	0	1	5	6	5	1	19
7. Trachea, bronchus, and lung cancers	165	0	0	0	5	36	53	37	6	137
8. Melanoma and other skin cancers	11	0	0	0	1	1	1	1	1	5
9. Breast cancer	63	—	0	0	0	0	0	0	0	1
10. Cervix uteri cancer	19	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	17	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	21	—	—	—	—	—	—	—	—	—
13. Prostate cancer	25	0	0	0	0	2	7	11	5	25
14. Bladder cancer	24	0	0	0	0	3	6	7	2	19
15. Lymphomas and multiple myeloma	23	0	0	1	2	3	3	2	1	12
16. Leukemia	27	0	1	2	2	3	3	3	1	15
Other malignant neoplasms	123	0	1	3	6	20	22	15	4	71
B. Other neoplasms	**8**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**4**
C. Diabetes mellitus	**51**	**0**	**0**	**1**	**2**	**4**	**6**	**6**	**2**	**21**
D. Endocrine disorders	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**3**
E. Neuropsychiatric conditions	**66**	**2**	**2**	**5**	**10**	**12**	**6**	**4**	**2**	**41**
1. Unipolar depressive disorders	0	0	0	0	0	0	0	0	0	0
2. Bipolar affective disorder	0	—	—	—	0	0	0	0	0	0
3. Schizophrenia	1	0	0	0	0	0	0	0	0	1
4. Epilepsy	9	0	0	1	2	1	0	0	0	6
5. Alcohol use disorders	10	0	0	0	2	3	2	1	0	8
6. Alzheimer's and other dementias	10	0	0	0	0	1	1	1	1	4
7. Parkinson's disease	4	0	0	0	0	0	0	1	0	2
8. Multiple sclerosis	4	0	0	0	0	1	0	0	0	2
9. Drug use disorders	11	0	0	2	4	3	1	0	0	9
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	1	0	0	0	0	0	0	0	0	0
Other neuropsychiatric disorders	17	1	1	2	1	2	1	1	0	10
F. Sense organ diseases	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	—	—	—	—	0	0	0	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	0	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**3,295**	**1**	**1**	**12**	**75**	**250**	**389**	**477**	**274**	**1,480**
1. Rheumatic heart disease	22	0	0	0	2	3	2	1	0	9
2. Hypertensive heart disease	109	0	0	0	2	9	13	15	7	47
3. Ischemic heart disease	1,685	0	0	3	38	153	226	266	131	817
4. Cerebrovascular disease	1,029	0	1	3	13	54	109	144	80	405
5. Inflammatory heart diseases	67	0	0	2	7	11	8	7	5	40
Other cardiovascular diseases	383	1	0	4	14	20	30	44	50	162
H. Respiratory diseases	**190**	**1**	**0**	**2**	**5**	**17**	**37**	**41**	**17**	**121**
1. Chronic obstructive pulmonary disease	130	0	0	0	2	10	25	32	13	84
2. Asthma	27	0	0	0	1	3	6	5	2	17
Other respiratory diseases	33	1	0	1	3	4	5	4	2	21

Table 3B.3 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
17	***5***	***19***	***68***	***214***	***407***	***818***	***884***	***2,432***
1	**2**	**5**	**25**	**73**	**94**	**113**	**48**	**360**
0	0	0	0	1	1	1	1	5
0	—	0	0	1	1	2	1	6
0	0	0	2	6	11	15	6	41
0	0	0	2	7	13	18	9	49
0	0	0	0	2	3	4	2	11
0	0	0	0	2	5	6	3	16
0	0	0	1	6	8	10	3	29
0	0	0	1	1	1	1	1	6
0	0	0	6	19	16	15	7	63
—	0	0	3	6	4	4	2	19
0	0	0	1	3	5	5	2	17
0	0	0	2	6	6	5	2	21
—	—	—	—	—	—	—	—	—
0	0	0	0	0	1	2	1	5
0	0	1	1	2	3	3	1	10
0	1	1	1	2	3	3	1	12
0	1	1	4	10	13	16	7	52
0	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**4**
0	**0**	**1**	**1**	**4**	**9**	**12**	**4**	**31**
0	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**3**
1	**1**	**2**	**4**	**5**	**3**	**4**	**4**	**25**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
0	0	1	1	1	0	0	0	3
0	0	0	0	1	0	0	0	2
0	0	0	0	0	1	2	2	6
0	0	0	0	0	0	1	0	2
0	0	0	1	1	0	0	0	2
—	0	0	1	1	0	0	0	2
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	1	7
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
1	**1**	**5**	**24**	**101**	**262**	**634**	**788**	**1,815**
0	0	0	1	3	4	3	1	13
0	0	0	1	6	13	23	19	62
0	0	1	7	44	129	314	374	868
0	0	2	7	35	92	224	264	624
0	0	1	2	3	4	8	9	27
0	0	1	5	10	20	62	122	221
1	**0**	**1**	**2**	**6**	**12**	**24**	**23**	**69**
0	0	0	1	3	7	17	18	46
0	0	0	1	1	3	3	3	11
1	0	1	1	1	2	3	3	12

(Continues on the following page.)

Table 3B.3 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**205**	**1**	**1**	**4**	**21**	**40**	**30**	**20**	**6**	**122**
1. Peptic ulcer disease	23	0	0	1	2	4	4	3	1	16
2. Cirrhosis of the liver	103	0	0	2	12	24	17	9	1	65
3. Appendicitis	1	0	0	0	0	0	0	0	0	1
Other digestive diseases	77	1	0	2	7	10	9	8	3	41
J. Genitourinary diseases	**53**	**0**	**0**	**2**	**3**	**6**	**6**	**7**	**3**	**28**
1. Nephritis and nephrosis	36	0	0	1	3	4	4	4	2	18
2. Benign prostatic hypertrophy	3	—	—	0	0	0	1	1	1	3
Other genitourinary system diseases	14	0	0	0	1	1	2	2	1	7
K. Skin diseases	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
L. Musculoskeletal diseases	**6**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**
1. Rheumatoid arthritis	2	0	0	0	0	0	0	0	0	0
2. Osteoarthritis	0	0	0	0	0	0	0	0	0	0
3. Gout	0	0	0	0	0	0	0	0	0	0
4. Low back pain	0	0	0	0	0	0	0	0	0	0
Other musculoskeletal disorders	3	0	0	0	0	0	0	0	0	1
M. Congenital anomalies	**28**	**13**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**16**
1. Abdominal wall defect	0	0	0	0	0	0	0	0	0	0
2. Anencephaly	0	0	0	0	0	0	0	0	0	0
3. Anorectal atresia	0	0	0	0	0	0	0	0	0	0
4. Cleft lip	0	0	0	0	0	0	0	0	—	0
5. Cleft palate	0	0	0	0	0	0	0	0	—	0
6. Esophageal atresia	0	0	0	0	0	0	0	0	0	0
7. Renal agenesis	0	0	0	0	0	0	0	0	0	0
8. Down syndrome	1	0	0	0	0	0	0	0	0	0
9. Congenital heart anomalies	13	6	0	0	0	0	0	0	0	7
10. Spina bifida	1	1	0	0	0	0	0	0	0	1
Other congenital anomalies	12	6	0	0	0	0	0	0	0	7
N. Oral conditions	**0**	**0**	**—**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Dental caries	0	—	—	—	—	—	—	—	—	—
2. Periodontal disease	0	—	—	—	0	—	—	—	—	0
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	—	0	0	0	0	0	0	0
III. Injuries	***607***	***6***	***10***	***99***	***140***	***132***	***53***	***22***	***6***	***470***
A. Unintentional injuries	**401**	**6**	**8**	**59**	**87**	**89**	**37**	**14**	**4**	**304**
1. Road traffic accidents	83	1	2	18	18	13	6	3	1	62
2. Poisonings	106	1	0	12	26	30	11	2	0	82
3. Falls	35	0	0	3	5	7	4	3	2	24
4. Fires	20	1	0	2	4	4	2	1	0	14
5. Drownings	35	1	2	7	9	6	3	1	0	29
6. Other unintentional injuries	121	3	3	18	25	28	12	4	1	93
B. Intentional injuries	**207**	**0**	**2**	**40**	**53**	**43**	**16**	**8**	**2**	**165**
1. Self-inflicted injuries	121	0	1	22	29	27	11	6	2	99
2. Violence	68	0	0	11	18	14	4	1	0	50
3. War	17	0	0	7	6	2	1	0	0	16
Other intentional injuries	1	0	0	0	0	0	0	—	0	0

Table 3B.3 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
1	**0**	**2**	**8**	**18**	**19**	**22**	**13**	**83**
0	0	0	0	1	1	2	2	7
0	0	1	4	12	11	8	3	39
0	0	0	0	0	0	0	0	1
1	0	1	3	5	7	11	8	36
0	**0**	**1**	**3**	**4**	**6**	**6**	**4**	**24**
0	0	1	2	3	4	5	3	18
—	—	—	—	—	—	—	—	—
0	0	0	1	1	2	2	1	7
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**4**
0	0	0	0	0	1	1	0	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	2
10	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**13**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	—	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	6
1	0	0	0	0	0	0	0	1
4	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
0	**—**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	0	—	—	0	0
—	—	—	—	—	—	—	0	0
—	—	—	—	—	—	—	—	—
0	—	0	0	0	0	0	0	0
5	***5***	***20***	***27***	***34***	***20***	***17***	***11***	***138***
5	**4**	**12**	**17**	**24**	**14**	**12**	**9**	**96**
1	1	5	4	4	3	3	1	21
0	0	3	6	9	4	2	1	24
0	0	1	1	1	1	3	4	12
1	0	0	1	1	1	1	1	5
1	1	1	1	1	1	1	0	6
2	1	3	5	7	4	3	2	27
0	**1**	**8**	**10**	**10**	**5**	**5**	**3**	**42**
—	1	4	4	5	3	3	2	22
0	0	3	5	4	2	2	1	18
0	0	0	0	0	0	0	0	2
0	0	0	0	0	0	0	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 2000.

b. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.4 Deaths by Cause, Sex, and Age in the Latin America and the Caribbean Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*526*	*28*	*56*	*74*	*52*	*31*	*11*	*6*	*2*	*260*
All causes	**3,277**	**226**	**30**	**178**	**211**	**288**	**276**	**336**	**288**	**1,833**
I. Communicable, maternal, perinatal, and nutritional conditions	***716***	***177***	***8***	***26***	***50***	***37***	***24***	***31***	***38***	***390***
A. Infectious and parasitic diseases	**324**	**52**	**5**	**22**	**44**	**27**	**14**	**14**	**11**	**189**
1. **Tuberculosis**	**45**	**1**	**0**	**4**	**6**	**7**	**5**	**4**	**2**	**29**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
a. Syphilis	1	1	0	0	0	0	0	0	0	1
b. Chlamydia	0	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	0	0	—	—	—	0	0	0
d. Other sexually transmitted diseases	1	0	—	—	0	0	—	0	0	0
3. **HIV/AIDS**	**83**	**3**	**1**	**11**	**27**	**9**	**1**	**0**	**0**	**54**
4. **Diarrheal diseases**	**55**	**24**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**29**
5. **Childhood-cluster diseases**	**7**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
a. Pertussis	6	3	—	—	—	—	0	—	—	3
b. Poliomyelitis[a]	0	0	0	0	0	0	0	—	0	0
c. Diphtheria	0	0	—	—	0	—	—	—	0	0
d. Measles	—	—	—	—	—	—	—	—	—	—
e. Tetanus	1	0	0	0	0	0	0	0	0	0
6. **Meningitis**	**17**	**5**	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**10**
7. **Hepatitis B[b]**	**4**	**0**	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**3**
Hepatitis C[b]	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
8. **Malaria**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
9. **Tropical-cluster diseases**	**15**	**0**	**0**	**0**	**1**	**3**	**2**	**1**	**1**	**8**
a. Trypanosomiasis	0	—	—	—	—	—	0	—	—	0
b. Chagas' disease	14	0	0	0	1	2	2	1	1	8
c. Schistosomiasis	1	0	0	0	0	0	0	0	0	0
d. Leishmaniasis	0	0	0	0	0	0	0	0	0	0
e. Lymphatic filariasis	0	—	—	—	0	—	0	0	—	0
f. Onchocerciasis	0	0	—	—	—	—	—	—	—	0
10. **Leprosy**	**1**	**—**	**—**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11. **Dengue**	**2**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**0**	**0**	**0**	**—**	**—**	**—**	**—**	**—**	**—**	**0**
14. **Intestinal nematode infections**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
a. Ascariasis	0	0	0	0	0	0	0	0	0	0
b. Trichuriasis	0	—	—	—	0	—	—	—	—	0
c. Hookworm disease	0	—	0	—	0	0	—	—	—	0
Other intestinal infections	1	0	0	0	0	0	0	0	0	1
Other infectious diseases	87	13	2	4	6	6	5	6	6	48
B. Respiratory infections	**160**	**24**	**2**	**3**	**5**	**7**	**8**	**13**	**21**	**82**
1. Lower respiratory infections	157	23	2	3	5	7	8	13	20	81
2. Upper respiratory infections	3	1	0	0	0	0	0	0	0	1
3. Otitis media	0	0	0	0	0	0	0	0	0	0
C. Maternal conditions	**16**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	4	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	1	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	4	—	—	—	—	—	—	—	—	—
4. Obstructed labor	0	—	—	—	—	—	—	—	—	—
5. Abortion	2	—	—	—	—	—	—	—	—	—
Other maternal conditions	5	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**164**	**93**	**0**	**0**	**0**	**0**	**—**	**—**	**—**	**93**
1. Low birthweight	20	11	—	—	—	—	—	—	—	11
2. Birth asphyxia and birth trauma	89	51	0	0	0	0	—	—	—	51
Other perinatal conditions	54	31	0	0	—	—	—	—	—	31
E. Nutritional deficiencies	**52**	**8**	**1**	**1**	**2**	**2**	**2**	**4**	**6**	**26**
1. Protein-energy malnutrition	37	7	1	1	1	1	1	3	4	19
2. Iodine deficiency	0	0	—	—	—	0	0	0	0	0
3. Vitamin A deficiency	0	0	—	—	—	—	0	—	0	0
4. Iron-deficiency anemia	13	1	0	1	1	1	1	1	1	6
Other nutritional disorders	3	0	0	0	0	0	0	0	0	2

Table 3B.4 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
27	*54*	*73*	*55*	*33*	*13*	*8*	*3*	*266*
181	**23**	**66**	**104**	**185**	**206**	**294**	**386**	**1,444**
140	***8***	***26***	***31***	***21***	***18***	***28***	***52***	***326***
42	**5**	**15**	**20**	**15**	**10**	**12**	**15**	**135**
0	**0**	**3**	**3**	**3**	**2**	**2**	**1**	**16**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	—	0	0	0	0	0	0	0
—	—	—	—	—	0	0	0	0
0	—	—	—	0	—	—	—	0
0	0	0	0	0	0	0	0	1
3	**1**	**9**	**13**	**3**	**0**	**0**	**0**	**30**
22	**0**	**0**	**0**	**0**	**1**	**1**	**2**	**26**
3	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
3	0	0	—	—	—	—	—	3
0	0	0	0	0	0	—	0	0
0	0	—	—	0	—	—	—	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
4	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**7**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	**0**	**0**	**1**	**2**	**2**	**1**	**1**	**7**
—	0	—	—	—	—	—	—	0
0	0	0	1	2	1	1	1	7
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
—	—	—	0	0	0	—	0	0
—	—	0	—	—	0	—	—	0
—	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	0	0	0	0	0	0	0	0
0	—	—	0	—	—	—	—	0
—	—	—	—	—	0	—	—	0
0	0	0	0	0	0	0	0	1
8	2	2	2	5	5	7	10	39
20	**2**	**2**	**3**	**4**	**6**	**12**	**29**	**78**
20	2	2	3	4	6	12	29	76
1	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	**0**	**9**	**7**	**0**	**—**	**0**	**0**	**16**
0	0	2	2	0	—	—	—	4
—	0	1	0	0	—	—	—	1
—	0	2	2	0	—	—	0	4
—	—	0	0	—	—	—	—	0
—	0	2	1	0	—	—	—	2
—	0	2	2	0	—	0	0	5
71	**0**	**—**	**0**	**—**	**—**	**—**	**0**	**71**
9	—	—	—	—	—	—	—	9
38	0	—	—	—	—	—	0	38
24	0	—	0	—	—	—	0	24
7	**1**	**1**	**1**	**2**	**2**	**4**	**9**	**26**
6	1	0	0	1	1	3	7	18
0	0	0	0	0	0	0	0	0
0	—	—	0	0	—	—	0	0
1	0	0	0	1	0	1	2	6
0	0	0	0	0	0	0	1	1

(Continues on the following page.)

Table 3B.4 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***2,187***	***38***	***10***	***32***	***81***	***206***	***235***	***293***	***243***	***1,138***
A. Malignant neoplasms	**484**	**2**	**3**	**7**	**14**	**47**	**60**	**70**	**44**	**247**
1. Mouth and oropharynx cancers	14	0	0	0	1	3	3	2	1	10
2. Esophageal cancer	16	—	0	0	1	3	3	3	2	12
3. Stomach cancer	57	0	0	0	2	7	9	10	6	34
4. Colon and rectal cancers	37	0	0	0	1	3	4	5	3	18
5. Liver cancer	21	0	0	0	1	2	3	3	2	11
6. Pancreas cancer	20	0	0	0	0	2	3	3	2	10
7. Trachea, bronchus, and lung cancers	55	0	0	0	1	8	12	12	5	38
8. Melanoma and other skin cancers	7	0	0	0	0	1	1	1	1	4
9. Breast cancer	37	0	—	0	0	0	0	0	0	0
10. Cervix uteri cancer	26	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	12	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	9	—	—	—	—	—	—	—	—	—
13. Prostate cancer	37	0	0	0	0	2	7	15	13	37
14. Bladder cancer	9	0	0	0	0	1	1	2	2	6
15. Lymphomas and multiple myeloma	24	0	1	1	2	3	3	3	1	13
16. Leukemia	22	1	2	2	1	2	1	2	1	12
Other malignant neoplasms	82	1	1	2	4	10	10	9	5	43
B. Other neoplasms	**13**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**6**
C. Diabetes mellitus	**163**	**0**	**0**	**1**	**4**	**15**	**19**	**20**	**11**	**70**
D. Endocrine disorders	**30**	**2**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**14**
E. Neuropsychiatric conditions	**70**	**2**	**1**	**5**	**9**	**10**	**5**	**6**	**6**	**44**
1. Unipolar depressive disorders	0	0	0	0	0	0	0	0	0	0
2. Bipolar affective disorder	0	0	0	0	0	0	0	0	0	0
3. Schizophrenia	0	0	0	0	0	0	0	0	0	0
4. Epilepsy	8	0	0	1	1	1	0	0	0	5
5. Alcohol use disorders	17	0	0	1	5	6	2	1	0	15
6. Alzheimer's and other dementias	14	0	0	0	0	0	1	2	3	5
7. Parkinson's disease	5	0	0	0	0	0	0	1	1	3
8. Multiple sclerosis	1	—	—	0	0	0	0	0	0	0
9. Drug use disorders	2	—	—	0	1	1	0	0	0	2
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	0	0	0	0	0	0	0	0	0	0
Other neuropsychiatric disorders	23	2	1	2	2	2	2	2	1	13
F. Sense organ diseases	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	—	—	0	—	—	0	0	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	0	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**910**	**2**	**1**	**7**	**25**	**79**	**97**	**130**	**120**	**462**
1. Rheumatic heart disease	6	0	0	0	0	1	0	0	0	2
2. Hypertensive heart disease	87	0	0	0	2	7	8	11	11	39
3. Ischemic heart disease	358	0	0	2	9	39	48	59	44	202
4. Cerebrovascular disease	267	0	0	2	7	22	27	38	33	129
5. Inflammatory heart diseases	31	0	0	1	2	4	4	4	3	18
Other cardiovascular diseases	160	1	0	2	5	8	9	17	28	72
H. Respiratory diseases	**195**	**5**	**1**	**3**	**5**	**11**	**19**	**32**	**32**	**107**
1. Chronic obstructive pulmonary disease	99	0	0	0	1	5	11	20	20	58
2. Asthma	12	1	0	0	0	1	1	1	1	5
Other respiratory diseases	84	4	1	2	4	6	7	10	11	44

Table 3B.4 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
33	***9***	***23***	***61***	***155***	***183***	***260***	***325***	***1,049***
2	**2**	**6**	**23**	**55**	**51**	**56**	**42**	**237**
0	0	0	0	1	1	1	1	4
—	0	0	0	1	1	1	1	4
0	0	0	2	4	5	6	6	23
0	0	0	1	3	4	5	5	19
0	0	0	1	2	2	3	2	10
0	0	0	0	2	2	3	2	10
0	0	0	1	4	5	5	3	17
0	0	0	0	1	1	1	1	3
0	0	0	5	12	8	7	5	37
—	0	1	4	9	5	5	2	26
0	—	0	1	3	3	3	2	12
0	0	0	1	3	2	2	1	9
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	1	1	3
0	0	1	1	2	2	3	2	11
1	1	1	1	2	1	2	1	10
1	1	1	3	8	9	10	7	40
0	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**6**
0	**0**	**1**	**3**	**16**	**24**	**28**	**21**	**93**
1	**1**	**1**	**1**	**2**	**2**	**3**	**4**	**16**
2	**1**	**2**	**3**	**3**	**2**	**5**	**8**	**26**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	1	1	0	0	0	0	3
0	0	0	0	0	0	0	0	1
0	0	0	0	0	1	2	6	8
0	0	0	0	0	0	1	1	2
—	0	0	0	0	0	0	0	1
—	—	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
1	1	1	1	1	1	1	2	10
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
2	**1**	**5**	**18**	**52**	**71**	**119**	**180**	**448**
0	0	0	1	1	1	1	0	4
0	0	0	2	6	8	13	18	48
0	0	1	4	18	29	45	60	156
0	0	2	7	18	22	37	52	138
0	0	0	1	2	2	3	4	14
1	1	2	4	7	9	20	46	88
5	**1**	**2**	**3**	**8**	**13**	**22**	**35**	**88**
1	0	0	1	3	7	12	17	42
0	0	0	1	1	1	1	2	6
3	1	1	2	4	5	9	16	40

(Continues on the following page.)

Table 3B.4 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**185**	**2**	**1**	**4**	**19**	**33**	**23**	**21**	**14**	**117**
1. Peptic ulcer disease	14	0	0	0	1	2	2	2	2	8
2. Cirrhosis of the liver	74	0	0	2	12	21	12	7	3	57
3. Appendicitis	3	0	0	0	0	0	0	0	0	2
Other digestive diseases	94	2	1	2	6	11	9	11	9	51
J. Genitourinary diseases	**70**	**1**	**0**	**2**	**3**	**5**	**7**	**10**	**11**	**38**
1. Nephritis and nephrosis	55	1	0	1	2	5	6	7	7	30
2. Benign prostatic hypertrophy	2	—	—	0	0	0	0	1	1	2
Other genitourinary system diseases	13	0	0	0	0	1	1	2	2	6
K. Skin diseases	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**3**
L. Musculoskeletal diseases	**12**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**4**
1. Rheumatoid arthritis	3	—	0	0	0	0	0	0	0	1
2. Osteoarthritis	1	0	—	0	0	0	0	0	0	0
3. Gout	0	—	—	0	0	0	0	0	0	0
4. Low back pain	0	—	—	0	0	0	0	0	0	0
Other musculoskeletal disorders	8	0	0	0	0	0	0	1	1	3
M. Congenital anomalies	**47**	**22**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**25**
1. Abdominal wall defect	1	1	0	0	0	—	0	0	0	1
2. Anencephaly	2	1	0	0	0	—	0	0	0	1
3. Anorectal atresia	0	0	0	0	0	—	0	0	0	0
4. Cleft lip	0	0	0	0	0	—	0	0	0	0
5. Cleft palate	0	0	0	0	0	—	0	0	0	0
6. Esophageal atresia	1	0	0	0	0	—	0	0	0	0
7. Renal agenesis	0	0	0	0	0	0	0	0	0	0
8. Down syndrome	2	1	0	0	0	0	0	0	0	1
9. Congenital heart anomalies	20	9	1	1	0	0	0	0	0	11
10. Spina bifida	1	1	0	0	0	0	0	0	0	1
Other congenital anomalies	19	9	0	0	0	0	0	0	0	10
N. Oral conditions	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Dental caries	—	—	—	—	—	—	—	—	—	—
2. Periodontal disease	0	—	—	0	0	0	0	0	0	0
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	0	0	0
III. Injuries	***374***	***11***	***12***	***120***	***80***	***45***	***18***	***12***	***8***	***305***
A. Unintentional injuries	**207**	**10**	**10**	**46**	**37**	**26**	**12**	**9**	**6**	**157**
1. Road traffic accidents	88	2	4	23	19	12	5	3	1	69
2. Poisonings	3	0	0	1	1	0	0	0	0	2
3. Falls	15	0	0	1	2	2	1	1	1	10
4. Fires	5	1	0	0	1	0	0	0	0	3
5. Drownings	19	2	2	6	3	2	1	0	0	15
6. Other unintentional injuries	78	6	3	14	12	9	5	4	3	57
B. Intentional injuries	**167**	**1**	**2**	**74**	**43**	**19**	**6**	**3**	**1**	**148**
1. Self-inflicted injuries	30	0	0	8	6	4	2	1	1	23
2. Violence	130	1	1	63	34	14	3	1	1	119
3. War	6	0	0	2	2	1	0	0	0	6
Other intentional injuries	1	0	0	1	0	0	0	0	0	1

Table 3B.4 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
1	**1**	**2**	**5**	**12**	**12**	**16**	**18**	**68**
0	0	0	0	1	1	2	2	6
0	0	0	2	5	4	4	2	18
0	0	0	0	0	0	0	0	1
1	0	1	3	6	7	11	13	43
1	**0**	**1**	**2**	**4**	**5**	**7**	**11**	**32**
0	0	1	2	4	4	6	8	25
—	—	—	—	—	—	—	—	—
0	0	0	0	1	1	1	3	7
0	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**5**
0	**0**	**1**	**1**	**1**	**1**	**1**	**2**	**8**
—	0	0	0	0	0	1	1	2
—	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	1	1	1	1	1	1	6
19	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**22**
0	0	0	0	—	—	0	0	0
1	0	0	0	0	—	0	—	1
0	0	0	0	0	0	0	—	0
0	0	0	0	—	—	0	—	0
0	0	0	0	—	—	0	—	0
0	0	0	0	0	—	0	0	0
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1
8	0	0	0	0	0	0	0	9
1	0	0	0	0	—	—	—	1
8	0	0	0	0	0	0	0	9
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	—	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
8	***6***	***17***	***11***	***8***	***5***	***6***	***8***	***69***
7	**5**	**9**	**7**	**6**	**4**	**5**	**8**	**50**
1	2	5	4	3	2	1	1	18
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	1	3	5
0	0	0	0	0	0	0	0	2
1	1	1	0	0	0	0	0	3
5	2	3	2	2	2	2	4	21
0	**1**	**8**	**5**	**3**	**1**	**1**	**0**	**19**
0	0	3	1	1	0	0	0	6
0	1	5	3	1	0	0	0	12
0	0	0	0	0	0	0	0	1
0	—	0	0	—	0	0	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 2002.

b. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.5 Deaths by Cause, Sex, and Age in the Middle East and North Africa Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*310*	*19*	*39*	*47*	*29*	*15*	*5*	*3*	*1*	*157*
All causes	**1,914**	**231**	**33**	**78**	**85**	**158**	**173**	**206**	**103**	**1,068**
I. Communicable, maternal, perinatal, and nutritional conditions	***464***	***178***	***7***	***5***	***8***	***12***	***11***	***14***	***8***	***243***
A. Infectious and parasitic diseases	**216**	**69**	**5**	**4**	**6**	**10**	**8**	**8**	**4**	**113**
1. **Tuberculosis**	**23**	**1**	**0**	**1**	**2**	**3**	**2**	**2**	**1**	**13**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**4**	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**2**
a. Syphilis	3	0	0	0	0	1	0	0	0	1
b. Chlamydia	0	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	—	0	0	0	0	—	—	0
d. Other sexually transmitted diseases	1	0	0	0	0	0	0	0	0	1
3. **HIV/AIDS**	**4**	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**2**
4. **Diarrheal diseases**	**74**	**34**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**39**
5. **Childhood-cluster diseases**	**27**	**10**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**13**
a. Pertussis	8	4	—	—	—	—	—	—	—	4
b. Poliomyelitis	0	0	—	—	—	—	—	—	—	0
c. Diphtheria	0	0	—	0	—	—	—	0	—	0
d. Measles	15	5	2	0	—	—	—	—	—	8
e. Tetanus	4	2	0	0	0	0	0	0	0	2
6. **Meningitis**	**10**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
7. **Hepatitis B**[a]	**6**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**0**	**3**
Hepatitis C[a]	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
8. **Malaria**	**19**	**8**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
9. **Tropical-cluster diseases**	**9**	**0**	**0**	**0**	**0**	**2**	**1**	**1**	**0**	**6**
a. Trypanosomiasis	1	0	0	0	0	0	0	0	—	0
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	8	0	0	0	0	1	1	1	0	5
d. Leishmaniasis	1	0	0	0	0	0	0	0	0	0
e. Lymphatic filariasis	0	—	—	—	0	—	—	—	—	0
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**0**	**—**	**—**	**—**	**—**	**0**	**0**	**0**	**—**	**0**
11. **Dengue**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
14. **Intestinal nematode infections**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Ascariasis	0	—	0	0	0	—	—	—	—	0
b. Trichuriasis	0	—	0	—	—	—	—	—	—	0
c. Hookworm disease	0	0	—	0	0	0	0	0	0	0
Other intestinal infections	0	—	0	0	0	0	0	0	0	0
Other infectious diseases	37	11	0	0	1	1	2	2	1	19
B. Respiratory infections	**110**	**40**	**2**	**1**	**1**	**2**	**3**	**5**	**4**	**58**
1. Lower respiratory infections	108	39	2	1	1	2	3	5	4	57
2. Upper respiratory infections	2	1	0	0	0	0	0	0	0	1
3. Otitis media	0	0	0	0	0	—	0	—	—	0
C. Maternal conditions	**15**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	4	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	1	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	2	—	—	—	—	—	—	—	—	—
4. Obstructed labor	0	—	—	—	—	—	—	—	—	—
5. Abortion	1	—	—	—	—	—	—	—	—	—
Other maternal conditions	6	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**106**	**64**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**64**
1. Low birthweight	54	32	—	—	—	—	—	—	—	32
2. Birth asphyxia and birth trauma	30	19	—	—	—	—	—	—	—	19
Other perinatal conditions	21	13	—	—	—	—	—	—	—	13
E. Nutritional deficiencies	**16**	**5**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**7**
1. Protein-energy malnutrition	8	3	0	0	0	0	0	0	0	4
2. Iodine deficiency	0	0	0	0	0	0	0	0	0	0
3. Vitamin A deficiency	0	0	0	0	0	0	0	0	0	0
4. Iron-deficiency anemia	6	1	0	0	0	0	0	0	0	2
Other nutritional disorders	2	1	0	0	0	0	0	0	0	1

Table 3B.5 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
18	*37*	*45*	*28*	*15*	*6*	*3*	*1*	*153*
199	**25**	**44**	**56**	**102**	**122**	**175**	**123**	**846**
151	***8***	***12***	***14***	***8***	***7***	***11***	***10***	***221***
68	**5**	**4**	**5**	**6**	**5**	**6**	**5**	**103**
1	**0**	**2**	**2**	**2**	**1**	**1**	**0**	**10**
0	**0**	**0**	**0**	**1**	**1**	**0**	**—**	**2**
0	0	0	0	0	0	0	—	1
—	—	0	0	0	0	—	—	0
0	—	0	0	0	0	—	—	0
0	0	0	0	0	0	0	—	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
32	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**35**
10	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**13**
4	—	—	—	—	—	—	—	4
0	—	—	—	—	—	—	—	0
0	0	—	—	—	—	—	0	0
5	2	0	—	—	—	—	—	8
2	0	0	0	0	0	0	0	2
5	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
0	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**3**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
9	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**10**
0	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**4**
0	0	0	0	0	0	0	—	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	1	1	1	3
0	0	0	0	0	0	0	—	0
—	—	—	—	0	—	—	0	0
—	—	—	—	—	—	—	—	—
0	**—**	**—**	**—**	**—**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	0	—	—	—	—	—	—	0
—	0	—	—	—	—	—	—	0
—	0	0	0	0	0	0	0	0
—	0	0	0	0	0	0	0	0
10	1	1	1	1	1	2	2	18
36	**2**	**1**	**1**	**1**	**2**	**4**	**4**	**52**
35	2	1	1	1	2	3	4	51
1	0	0	0	0	0	0	0	1
0	—	0	—	0	—	—	0	0
—	**0**	**7**	**8**	**0**	**—**	**—**	**—**	**15**
—	0	2	2	0	—	—	—	4
—	0	0	0	0	—	—	—	1
—	0	1	1	0	—	—	—	2
—	—	0	0	0	—	—	—	0
—	—	1	1	—	—	—	—	1
—	0	3	3	0	—	—	—	6
42	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**42**
22	—	—	—	—	—	—	—	22
11	—	—	—	—	—	—	—	11
9	—	—	—	—	—	—	—	9
5	**1**	**0**	**0**	**0**	**0**	**1**	**1**	**9**
4	0	0	0	0	0	0	0	5
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
1	1	0	0	0	0	1	1	3
1	0	0	0	0	0	0	0	1

(Continues on the following page.)

Table 3B.5 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***1,235***	***38***	***11***	***26***	***49***	***123***	***149***	***183***	***91***	***671***
A. Malignant neoplasms	**165**	**2**	**2**	**5**	**8**	**20**	**24**	**24**	**9**	**95**
1. Mouth and oropharynx cancers	5	0	0	0	0	1	1	1	0	3
2. Esophageal cancer	5	0	0	0	0	1	1	1	0	3
3. Stomach cancer	18	0	0	0	1	2	3	4	1	11
4. Colon and rectal cancers	10	0	0	0	1	1	1	1	1	6
5. Liver cancer	9	0	0	0	0	1	2	2	0	6
6. Pancreas cancer	4	0	0	0	0	1	1	1	0	2
7. Trachea, bronchus, and lung cancers	20	0	0	0	1	4	5	4	1	15
8. Melanoma and other skin cancers	1	0	0	0	0	0	0	0	0	1
9. Breast cancer	14	—	—	—	0	0	0	—	—	0
10. Cervix uteri cancer	5	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	1	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	2	—	—	—	—	—	—	—	—	—
13. Prostate cancer	6	0	0	0	0	1	1	3	1	6
14. Bladder cancer	15	0	0	0	1	3	3	3	1	12
15. Lymphomas and multiple myeloma	12	0	1	1	1	1	1	1	0	7
16. Leukemia	14	1	1	2	1	1	1	1	0	8
Other malignant neoplasms	26	1	1	1	2	3	4	3	1	15
B. Other neoplasms	**19**	**0**	**0**	**1**	**1**	**2**	**3**	**3**	**1**	**11**
C. Diabetes mellitus	**31**	**0**	**0**	**0**	**1**	**3**	**4**	**5**	**2**	**14**
D. Endocrine disorders	**20**	**1**	**0**	**1**	**1**	**2**	**2**	**2**	**1**	**9**
E. Neuropsychiatric conditions	**51**	**2**	**1**	**6**	**10**	**7**	**3**	**3**	**2**	**34**
1. Unipolar depressive disorders	0	0	0	0	0	0	0	0	0	0
2. Bipolar affective disorder	0	0	0	0	0	0	0	0	0	0
3. Schizophrenia	0	—	0	0	0	0	0	0	0	0
4. Epilepsy	5	0	0	1	1	0	0	0	0	3
5. Alcohol use disorders	3	—	0	1	1	1	0	0	0	3
6. Alzheimer's and other dementias	3	0	0	0	0	0	0	1	1	2
7. Parkinson's disease	3	0	0	0	0	0	0	0	0	1
8. Multiple sclerosis	1	—	0	0	0	0	0	0	0	0
9. Drug use disorders	19	—	0	3	7	5	0	0	0	16
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	3	0	0	1	0	0	0	0	0	2
Other neuropsychiatric disorders	14	1	0	1	1	1	1	2	1	8
F. Sense organ diseases	**1**	**0**	**0**	**—**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	—	—	—	—	—	—	—	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	1	0	0	—	0	0	0	0	0	0
g. Cardiovascular diseases	**671**	**5**	**3**	**8**	**20**	**65**	**84**	**111**	**60**	**356**
1. Rheumatic heart disease	10	0	0	1	1	1	0	0	0	5
2. Hypertensive heart disease	74	0	0	0	1	6	10	13	7	38
3. Ischemic heart disease	323	0	0	2	11	41	49	59	26	188
4. Cerebrovascular disease	130	2	1	3	3	9	14	22	13	66
5. Inflammatory heart diseases	26	1	0	1	1	2	3	4	3	14
Other cardiovascular diseases	108	2	1	2	3	6	8	13	11	46
H. Respiratory diseases	**80**	**4**	**1**	**1**	**3**	**6**	**10**	**14**	**8**	**46**
1. Chronic obstructive pulmonary disease	41	0	0	0	1	3	6	9	5	23
2. Asthma	7	0	0	1	2	1	0	0	0	4
Other respiratory diseases	33	3	0	1	1	2	4	5	3	18

Table 3B.5 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
39	***9***	***16***	***34***	***87***	***110***	***158***	***111***	***564***
1	**2**	**4**	**11**	**19**	**14**	**14**	**6**	**70**
0	0	0	0	0	0	0	0	1
0	0	0	0	0	1	1	0	2
0	0	0	1	1	1	2	1	7
0	0	0	1	1	1	1	1	4
0	0	0	0	1	1	1	0	3
0	0	0	0	0	0	0	0	2
0	0	0	1	1	1	1	0	4
0	0	0	0	0	0	0	0	1
0	0	0	3	5	2	2	1	14
0	0	0	1	2	1	1	0	5
0	0	0	0	0	0	0	0	1
0	0	0	0	1	0	0	0	2
—	—	—	—	—	—	—	—	—
0	0	0	0	1	1	1	0	3
0	0	1	1	1	1	1	0	5
1	1	1	1	1	1	1	0	6
1	0	1	2	2	2	2	1	11
0	**0**	**0**	**1**	**3**	**2**	**2**	**1**	**9**
0	**0**	**0**	**1**	**3**	**5**	**6**	**3**	**17**
1	**0**	**0**	**1**	**1**	**2**	**3**	**1**	**10**
1	**1**	**2**	**3**	**2**	**2**	**3**	**2**	**17**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
—	—	0	0	0	0	0	0	0
0	0	1	0	0	0	0	0	2
—	—	0	0	0	0	0	—	0
0	0	0	0	0	0	1	1	2
0	0	0	0	0	0	0	0	1
—	0	0	0	0	0	0	0	0
—	—	1	2	1	0	0	0	3
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	1	0	0	0	0	0	0	2
1	0	0	0	1	1	1	1	6
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
10	**3**	**5**	**11**	**40**	**63**	**103**	**79**	**314**
0	0	1	1	1	0	1	0	5
0	0	0	1	4	8	13	9	36
0	0	1	4	19	32	47	31	135
1	1	1	2	7	13	22	17	64
0	0	0	1	1	2	4	3	12
8	1	1	2	6	8	17	18	62
3	**0**	**1**	**3**	**4**	**6**	**10**	**7**	**34**
0	0	0	1	2	4	6	4	17
0	0	0	1	1	0	0	0	3
3	0	0	1	2	2	4	3	14

(Continues on the following page.)

Table 3B.5 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**88**	**2**	**1**	**2**	**2**	**12**	**12**	**11**	**4**	**46**
1. Peptic ulcer disease	5	0	0	0	0	1	1	1	0	3
2. Cirrhosis of the liver	37	0	0	1	1	6	6	5	2	21
3. Appendicitis	0	0	0	0	0	0	0	0	0	0
Other digestive diseases	45	1	0	1	1	6	5	5	2	22
J. Genitourinary diseases	**57**	**1**	**1**	**1**	**2**	**6**	**8**	**9**	**5**	**31**
1. Nephritis and nephrosis	42	0	0	1	1	5	6	6	3	23
2. Benign prostatic hypertrophy	2	—	—	—	—	0	0	1	1	2
Other genitourinary system diseases	14	0	0	0	1	1	1	2	1	7
K. Skin diseases	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**
L. Musculoskeletal diseases	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1. Rheumatoid arthritis	0	0	0	0	0	0	0	0	0	0
2. Osteoarthritis	0	0	—	0	0	0	0	0	0	0
3. Gout	0	0	—	0	0	0	0	0	0	0
4. Low back pain	0	0	—	0	0	0	0	0	0	0
Other musculoskeletal disorders	1	0	0	0	0	0	0	0	0	1
M. Congenital anomalies	**46**	**22**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**24**
1. Abdominal wall defect	0	0	0	0	0	0	0	0	0	0
2. Anencephaly	2	1	0	0	0	0	0	0	0	1
3. Anorectal atresia	0	0	0	0	0	0	0	0	0	0
4. Cleft lip	0	0	0	0	0	0	0	0	0	0
5. Cleft palate	0	0	0	0	0	0	0	0	0	0
6. Esophageal atresia	0	0	0	0	0	0	0	0	0	0
7. Renal agenesis	0	0	0	0	0	0	0	0	0	0
8. Down syndrome	1	1	0	0	0	0	0	0	0	1
9. Congenital heart anomalies	20	10	0	0	0	0	0	0	0	11
10. Spina bifida	3	1	0	0	0	0	0	0	—	1
Other congenital anomalies	18	9	0	0	0	0	0	0	0	10
N. Oral conditions	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**0**	**0**
1. Dental caries	—	—	—	—	—	—	—	—	—	—
2. Periodontal disease	—	—	—	—	—	—	—	—	—	—
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	—	0	0
III. Injuries	***216***	***15***	***16***	***47***	***28***	***23***	***13***	***10***	***3***	***154***
A. Unintentional injuries	**181**	**14**	**16**	**36**	**21**	**20**	**11**	**9**	**3**	**129**
1. Road traffic accidents	99	5	8	20	14	12	7	5	1	74
2. Poisonings	7	1	0	1	1	2	0	0	0	5
3. Falls	12	1	1	1	2	2	1	1	0	9
4. Fires	13	1	1	2	1	1	0	0	0	6
5. Drownings	14	2	2	5	1	1	0	0	0	11
6. Other unintentional injuries	36	4	3	7	3	3	2	2	1	25
B. Intentional injuries	**35**	**0**	**1**	**11**	**7**	**4**	**2**	**1**	**0**	**25**
1. Self-inflicted injuries	14	0	0	4	2	1	1	0	0	9
2. Violence	10	0	0	4	2	1	1	0	0	8
3. War	8	0	0	3	3	1	0	0	0	7
Other intentional injuries	2	0	0	1	0	0	0	0	0	1

Table 3B.5 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
1	**1**	**1**	**2**	**9**	**10**	**11**	**6**	**42**
0	0	0	0	0	0	1	0	2
0	0	0	1	4	4	4	2	16
0	0	0	0	0	0	0	0	0
1	0	0	1	4	6	7	4	24
1	**1**	**1**	**2**	**5**	**6**	**7**	**4**	**26**
0	0	1	1	4	4	5	3	19
—	—	—	—	—	—	—	—	—
0	0	0	1	1	1	2	1	7
0	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**2**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
19	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**21**
0	0	0	0	0	0	—	0	0
1	0	0	0	0	0	—	0	1
0	0	0	0	0	0	—	0	0
0	0	0	0	0	0	—	0	0
0	0	0	0	0	0	—	0	0
0	0	0	0	0	0	—	0	0
0	0	0	0	0	0	—	0	0
1	0	0	0	0	0	—	0	1
8	0	0	0	0	0	0	0	9
1	0	0	0	—	0	0	—	1
7	0	0	0	0	0	0	0	8
0	**—**	**—**	**—**	**—**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	—	—	—	—	0	0	0	0
10	***8***	***16***	***9***	***7***	***5***	***6***	***3***	***61***
9	**8**	**11**	**7**	**5**	**4**	**5**	**2**	**52**
3	4	5	4	3	2	2	1	25
0	0	1	0	0	0	0	0	2
1	0	0	0	0	0	1	0	3
1	1	3	1	1	0	1	0	8
1	1	1	0	0	0	0	0	3
3	2	2	1	1	1	1	1	11
0	**0**	**4**	**2**	**1**	**1**	**0**	**0**	**9**
0	0	3	1	1	0	0	0	6
0	0	1	1	0	0	0	0	2
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.6 Deaths by Cause, Sex, and Age in the South Asia Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*1,388*	*88*	*164*	*195*	*139*	*81*	*30*	*14*	*4*	*715*
All causes	**13,557**	**1,782**	**246**	**485**	**688**	**1,117**	**1,111**	**1,127**	**543**	**7,099**
I. Communicable, maternal, perinatal, and nutritional conditions	***5,882***	***1,623***	***142***	***167***	***296***	***270***	***201***	***204***	***103***	***3,007***
A. Infectious and parasitic diseases	**2,987**	**597**	**107**	**153**	**279**	**239**	**115**	**92**	**42**	**1,624**
1. **Tuberculosis**	**604**	**5**	**6**	**49**	**97**	**118**	**69**	**32**	**5**	**381**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**71**	**12**	**0**	**0**	**1**	**7**	**6**	**5**	**2**	**33**
a. Syphilis	59	12	0	0	0	5	6	5	2	30
b. Chlamydia	6	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	—	0	0	—	0	—	—	0
d. Other sexually transmitted diseases	5	0	0	0	1	3	0	0	0	3
3. **HIV/AIDS**	**272**	**7**	**2**	**42**	**114**	**41**	**3**	**1**	**0**	**210**
4. **Diarrheal diseases**	**695**	**329**	**1**	**2**	**4**	**5**	**5**	**7**	**9**	**363**
5. **Childhood-cluster diseases**	**467**	**167**	**41**	**11**	**6**	**3**	**1**	**1**	**1**	**231**
a. Pertussis	108	54	—	—	—	—	—	—	—	54
b. Poliomyelitis	0	0	—	—	—	—	—	—	—	0
c. Diphtheria	3	1	0	0	0	0	0	0	—	1
d. Measles	216	71	31	4	—	—	—	—	—	106
e. Tetanus	140	41	10	7	6	3	1	1	1	70
6. **Meningitis**	**71**	**4**	**9**	**6**	**4**	**5**	**3**	**4**	**2**	**36**
7. **Hepatitis B**[a]	**28**	**0**	**0**	**3**	**4**	**7**	**2**	**2**	**1**	**19**
Hepatitis C[a]	**11**	**0**	**0**	**1**	**2**	**3**	**1**	**1**	**0**	**7**
8. **Malaria**	**63**	**27**	**0**	**1**	**1**	**0**	**0**	**0**	**0**	**30**
9. **Tropical-cluster diseases**	**41**	**1**	**8**	**6**	**3**	**3**	**1**	**0**	**0**	**22**
a. Trypanosomiasis	0	—	—	—	0	—	—	—	—	0
b. Chagas' disease	0	—	—	—	—	—	—	—	0	0
c. Schistosomiasis	0	—	0	0	0	0	0	0	0	0
d. Leishmaniasis	40	1	8	6	3	2	1	0	—	22
e. Lymphatic filariasis	0	0	—	0	0	0	0	—	0	0
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
11. **Dengue**	**9**	**1**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
12. **Japanese encephalitis**	**10**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**5**
13. **Trachoma**	**0**	**0**	**—**	**0**	**—**	**0**	**—**	**—**	**—**	**0**
14. **Intestinal nematode infections**	**4**	**0**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
a. Ascariasis	2	0	1	0	0	0	—	0	—	1
b. Trichuriasis	2	0	1	—	—	—	—	—	—	1
c. Hookworm disease	0	0	—	—	0	—	—	0	0	0
Other intestinal infections	1	0	0	0	0	0	0	0	0	0
Other infectious diseases	638	43	35	32	41	46	22	39	21	278
B. Respiratory infections	**1,435**	**412**	**19**	**9**	**11**	**16**	**84**	**108**	**58**	**718**
1. Lower respiratory infections	1,414	411	19	9	11	15	82	105	57	708
2. Upper respiratory infections	20	2	0	0	0	1	2	3	1	9
3. Otitis media	1	0	0	0	0	0	0	0	0	0
C. Maternal conditions	**199**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	61	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	27	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	28	—	—	—	—	—	—	—	—	—
4. Obstructed labor	19	—	—	—	—	—	—	—	—	—
5. Abortion	28	—	—	—	—	—	—	—	—	—
Other maternal conditions	36	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**1,086**	**597**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**597**
1. Low birthweight	757	406	—	—	—	—	—	—	—	406
2. Birth asphyxia and birth trauma	192	122	—	—	—	—	—	—	—	122
Other perinatal conditions	137	68	—	—	—	—	—	—	—	68
E. Nutritional deficiencies	**175**	**17**	**16**	**5**	**5**	**15**	**2**	**5**	**3**	**67**
1. Protein-energy malnutrition	67	13	11	2	0	1	0	0	0	29
2. Iodine deficiency	3	1	1	—	0	0	0	0	0	1
3. Vitamin A deficiency	4	0	1	0	—	0	—	—	—	2
4. Iron-deficiency anemia	61	0	2	2	4	11	0	0	0	19
Other nutritional disorders	39	2	1	1	1	3	2	4	2	16

Table 3B.6 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
83	*154*	*180*	*128*	*77*	*31*	*16*	*4*	*673*
1,830	**289**	**502**	**480**	**763**	**911**	**1,089**	**594**	**6,458**
1,619	***176***	***221***	***231***	***157***	***165***	***190***	***117***	***2,875***
676	**134**	**112**	**119**	**119**	**79**	**79**	**46**	**1,363**
4	**7**	**48**	**61**	**54**	**30**	**17**	**4**	**224**
25	**0**	**0**	**1**	**6**	**4**	**2**	**1**	**38**
25	0	0	0	0	2	2	1	29
—	—	0	1	5	1	—	—	6
0	—	0	0	0	0	—	—	0
0	0	0	0	1	1	0	0	2
7	**2**	**20**	**25**	**8**	**1**	**0**	**0**	**62**
302	**1**	**1**	**2**	**4**	**5**	**7**	**12**	**332**
171	**42**	**11**	**6**	**3**	**1**	**1**	**1**	**236**
54	—	—	—	—	—	—	—	54
0	—	—	—	—	—	—	—	0
1	0	0	0	—	—	—	0	2
74	31	4	—	—	—	—	—	110
42	10	7	6	3	1	1	1	70
13	**11**	**4**	**1**	**1**	**2**	**2**	**1**	**35**
0	**1**	**2**	**1**	**2**	**1**	**1**	**0**	**9**
0	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**4**
30	**0**	**1**	**1**	**1**	**0**	**0**	**0**	**33**
3	**8**	**4**	**1**	**1**	**1**	**0**	**0**	**18**
—	—	—	—	—	—	—	—	—
—	—	—	—	0	—	—	—	0
—	0	0	0	0	0	0	0	0
3	8	4	1	1	1	0	—	18
—	—	—	0	0	—	0	0	0
—	—	—	—	—	—	—	—	—
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
2	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**5**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0	1	0	0	—	0	—	—	1
—	1	—	—	—	—	0	—	1
—	0	0	—	—	—	—	—	0
0	0	0	0	0	0	0	0	0
117	57	20	19	37	34	48	27	360
420	**25**	**8**	**5**	**11**	**76**	**105**	**67**	**717**
415	24	8	4	11	74	103	66	706
5	0	0	0	0	2	2	1	11
0	0	0	0	0	0	—	0	0
—	**—**	**98**	**99**	**2**	**—**	**—**	**—**	**199**
—	—	27	32	1	—	—	—	61
—	—	14	12	0	—	—	—	27
—	—	16	11	0	—	—	—	28
—	—	10	9	0	—	—	—	19
—	—	17	12	—	—	—	—	28
—	—	13	23	1	—	—	—	36
490	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**490**
351	—	—	—	—	—	—	—	351
70	—	—	—	—	—	—	—	70
68	—	—	—	—	—	—	—	68
33	**17**	**3**	**8**	**25**	**10**	**7**	**4**	**107**
20	14	1	1	2	1	0	0	38
2	0	0	0	0	0	0	0	2
1	1	—	—	0	—	0	0	2
2	1	2	7	21	7	0	0	42
8	1	0	0	1	2	6	3	23

(Continues on the following page.)

Table 3B.6 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***6,346***	***129***	***44***	***107***	***203***	***714***	***854***	***872***	***412***	***3,335***
A. Malignant neoplasms	**927**	**6**	**7**	**18**	**34**	**94**	**154**	**112**	**51**	**476**
1. Mouth and oropharynx cancers	140	0	0	2	7	21	35	20	8	94
2. Esophageal cancer	80	0	0	0	3	9	18	10	4	44
3. Stomach cancer	45	0	0	1	2	6	9	7	3	28
4. Colon and rectal cancers	35	0	0	1	3	4	6	5	3	20
5. Liver cancer	27	0	0	1	2	4	5	3	1	17
6. Pancreas cancer	13	0	0	0	1	2	3	2	1	7
7. Trachea, bronchus, and lung cancers	129	0	0	1	5	26	38	28	9	106
8. Melanoma and other skin cancers	3	0	0	0	0	0	0	0	0	1
9. Breast cancer	76	—	—	0	0	0	0	0	0	0
10. Cervix uteri cancer	83	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	4	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	21	—	—	—	—	—	—	—	—	—
13. Prostate cancer	21	0	0	0	0	1	6	9	5	21
14. Bladder cancer	30	0	0	0	0	1	5	6	4	16
15. Lymphomas and multiple myeloma	82	1	2	3	4	4	7	5	3	29
16. Leukemia	38	2	3	6	3	2	3	2	1	22
Other malignant neoplasms	99	3	2	2	5	13	20	16	10	71
B. Other neoplasms	**18**	**1**	**1**	**2**	**1**	**2**	**1**	**1**	**1**	**9**
C. Diabetes mellitus	**196**	**1**	**1**	**3**	**5**	**25**	**26**	**27**	**17**	**104**
D. Endocrine disorders	**26**	**5**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**12**
E. Neuropsychiatric conditions	**234**	**8**	**5**	**10**	**21**	**17**	**6**	**43**	**23**	**132**
1. Unipolar depressive disorders	9	—	—	—	2	2	1	—	—	4
2. Bipolar affective disorder	0	0	0	0	0	0	0	—	—	0
3. Schizophrenia	13	—	0	0	2	3	1	1	0	7
4. Epilepsy	32	7	3	2	1	1	0	1	0	15
5. Alcohol use disorders	13	—	0	2	3	4	2	1	0	12
6. Alzheimer's and other dementias	81	0	0	0	0	0	0	27	14	41
7. Parkinson's disease	9	0	0	0	0	0	0	3	2	5
8. Multiple sclerosis	1	0	0	0	0	0	0	0	0	1
9. Drug use disorders	29	—	0	4	12	7	1	0	0	24
10. Post-traumatic stress disorder	0	—	—	—	0	0	—	—	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	0	0	0	0	0	0	0	0	0	0
Other neuropsychiatric disorders	46	1	2	1	1	1	1	11	6	23
F. Sense organ diseases	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	0	—	0	0	0	0	—	—	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	1	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**3,421**	**18**	**11**	**36**	**84**	**374**	**495**	**527**	**250**	**1,795**
1. Rheumatic heart disease	128	6	3	9	7	12	10	10	5	61
2. Hypertensive heart disease	90	0	0	1	3	10	12	13	6	47
3. Ischemic heart disease	1,838	2	3	10	49	244	293	297	135	1,032
4. Cerebrovascular disease	923	3	1	4	10	76	140	159	74	467
5. Inflammatory heart diseases	71	2	1	2	4	6	7	8	4	34
Other cardiovascular diseases	372	4	4	9	12	26	32	41	27	154
H. Respiratory diseases	**746**	**8**	**4**	**8**	**19**	**111**	**110**	**103**	**41**	**405**
1. Chronic obstructive pulmonary disease	577	0	0	0	7	91	99	88	34	318
2. Asthma	78	0	2	6	9	14	3	3	1	39
Other respiratory diseases	91	7	2	2	3	7	8	12	6	48

Table 3B.6 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
163	***57***	***117***	***153***	***521***	***697***	***852***	***452***	***3,011***
7	**6**	**18**	**37**	**108**	**119**	**91**	**64**	**451**
0	0	1	2	11	14	11	8	47
0	0	0	2	8	11	8	6	36
0	0	0	1	4	4	4	4	17
0	0	0	1	3	4	3	3	15
0	0	2	1	3	2	2	1	11
—	—	0	0	1	1	1	1	5
0	0	0	2	7	7	6	2	23
0	0	0	0	0	0	0	0	1
0	0	1	10	23	20	13	9	76
0	0	6	5	26	26	14	7	83
0	0	0	0	1	1	1	1	4
0	0	1	2	5	6	5	3	21
—	—	—	—	—	—	—	—	—
1	0	0	2	2	3	3	3	14
2	3	4	5	9	12	11	7	53
3	2	3	2	2	2	1	1	16
1	1	0	2	5	6	6	7	28
0	**0**	**1**	**2**	**2**	**1**	**1**	**1**	**9**
1	**1**	**2**	**3**	**19**	**29**	**26**	**11**	**91**
5	**1**	**1**	**1**	**1**	**2**	**2**	**1**	**13**
6	**6**	**6**	**6**	**10**	**5**	**41**	**22**	**103**
—	—	0	1	3	1	0	0	5
0	—	0	0	0	0	0	0	0
0	0	0	1	3	1	1	1	6
6	4	3	1	2	1	1	0	18
—	—	0	0	0	0	0	0	1
0	0	0	0	0	0	26	14	40
0	—	0	0	0	0	3	1	4
0	0	0	0	0	0	0	0	0
—	—	1	2	2	0	0	0	5
—	—	—	—	0	0	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
0	2	1	1	1	2	11	6	24
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	—	—	0	—	—	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	1
21	**13**	**42**	**58**	**229**	**427**	**553**	**281**	**1,626**
7	4	8	7	12	10	12	6	66
0	1	1	2	9	12	12	7	43
2	1	18	33	125	233	269	125	806
2	1	2	6	51	126	175	93	456
2	1	2	2	5	7	11	6	37
9	4	10	9	27	40	75	44	217
9	**4**	**9**	**18**	**91**	**71**	**91**	**47**	**340**
0	0	0	7	72	62	78	40	259
0	2	7	10	13	2	2	1	39
9	2	2	2	5	7	10	6	42

(Continues on the following page.)

Table 3B.6 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**444**	**11**	**9**	**18**	**27**	**65**	**40**	**35**	**18**	**222**
1. Peptic ulcer disease	82	2	1	3	8	17	8	7	3	50
2. Cirrhosis of the liver	185	6	3	7	13	35	22	16	6	107
3. Appendicitis	7	0	0	0	0	1	1	1	1	4
Other digestive diseases	169	4	5	7	6	12	10	10	8	62
J. Genitourinary diseases	**156**	**5**	**3**	**6**	**10**	**23**	**19**	**19**	**9**	**93**
1. Nephritis and nephrosis	132	4	3	5	9	17	15	15	7	74
2. Benign prostatic hypertrophy	12	—	—	—	0	4	3	3	1	12
Other genitourinary system diseases	13	0	0	1	1	1	1	1	1	7
K. Skin diseases	**10**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**5**
L. Musculoskeletal diseases	**11**	**0**	**0**	**1**	**0**	**1**	**1**	**1**	**1**	**5**
1. Rheumatoid arthritis	3	0	0	0	0	0	0	0	0	1
2. Osteoarthritis	0	—	—	—	0	0	0	0	0	0
3. Gout	0	—	—	—	0	0	0	0	0	0
4. Low back pain	0	—	—	—	—	—	0	0	0	0
Other musculoskeletal disorders	8	0	0	1	0	1	1	1	1	4
M. Congenital anomalies	**157**	**67**	**2**	**5**	**0**	**0**	**0**	**0**	**0**	**75**
1. Abdominal wall defect	1	0	—	—	—	—	—	—	—	0
2. Anencephaly	11	5	—	—	—	—	—	—	—	5
3. Anorectal atresia	0	0	—	—	—	—	—	—	—	0
4. Cleft lip	0	0	—	—	—	—	—	—	—	0
5. Cleft palate	0	0	—	0	0	—	—	—	—	0
6. Esophageal atresia	—	—	—	—	—	—	—	—	—	—
7. Renal agenesis	1	0	0	—	—	—	0	—	—	0
8. Down syndrome	12	3	1	2	—	—	—	—	—	5
9. Congenital heart anomalies	105	45	1	3	0	0	0	0	0	49
10. Spina bifida	13	6	0	0	0	0	0	0	—	6
Other congenital anomalies	15	7	0	0	0	0	0	0	0	8
N. Oral conditions	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Dental caries	—	—	—	—	—	—	—	—	—	—
2. Periodontal disease	0	—	—	—	—	—	—	—	—	—
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	0	0	0
III. Injuries	***1,329***	***30***	***60***	***212***	***189***	***132***	***56***	***51***	***28***	***758***
A. Unintentional injuries	**994**	**28**	**55**	**131**	**126**	**100**	**45**	**41**	**22**	**548**
1. Road traffic accidents	238	4	14	45	53	36	11	9	4	176
2. Poisonings	90	1	3	8	8	17	6	3	1	47
3. Falls	112	4	4	8	8	9	9	14	9	67
4. Fires	183	5	4	15	15	7	3	2	1	52
5. Drownings	90	5	12	16	9	6	3	3	1	55
6. Other unintentional injuries	280	10	18	38	33	24	13	11	5	152
B. Intentional injuries	**335**	**2**	**5**	**81**	**63**	**32**	**11**	**10**	**6**	**210**
1. Self-inflicted injuries	224	—	3	53	39	20	6	6	3	130
2. Violence	79	1	2	17	15	9	3	3	3	52
3. War	26	0	0	10	8	3	1	0	0	23
Other intentional injuries	6	0	0	1	1	1	1	0	0	5

Table 3B.6 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
31	**19**	**29**	**23**	**45**	**29**	**30**	**16**	**221**
2	1	2	4	8	5	6	3	32
14	6	10	8	17	10	10	4	79
0	0	0	0	1	1	1	1	3
15	12	16	11	19	13	13	8	107
4	**2**	**5**	**5**	**14**	**13**	**13**	**7**	**63**
4	2	4	4	13	12	12	6	57
—	—	—	—	—	—	—	—	—
0	0	1	1	1	1	1	0	6
0	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**5**
1	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**6**
0	0	0	0	0	0	1	0	2
0	—	—	0	0	0	0	0	0
—	—	—	—	0	0	0	0	0
0	0	0	—	0	0	—	0	0
1	0	0	0	0	0	1	1	4
75	**3**	**4**	**0**	**0**	**0**	**0**	**0**	**83**
0	—	—	—	—	—	—	—	0
6	—	—	—	—	0	—	—	6
0	—	—	—	—	—	—	—	0
0	—	—	—	—	—	—	—	0
0	—	—	—	0	—	—	—	0
—	—	—	—	—	—	—	—	—
0	0	—	—	—	0	—	—	0
4	1	2	—	—	—	—	—	6
52	2	2	0	0	0	0	0	56
7	0	0	0	0	—	0	0	7
6	0	0	0	0	0	0	0	7
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	0	0	0	0	—	—	—	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
49	***56***	***164***	***95***	***86***	***48***	***47***	***25***	***571***
47	**52**	**109**	**68**	**64**	**41**	**41**	**23**	**445**
7	8	11	10	14	5	5	2	62
1	4	5	6	9	12	4	2	43
4	4	4	3	6	5	13	6	45
9	10	54	30	13	6	6	3	131
6	9	8	4	3	2	2	1	36
20	16	27	16	18	11	12	8	128
2	**5**	**55**	**27**	**21**	**7**	**6**	**2**	**125**
0	3	49	21	14	3	3	2	95
2	1	6	6	6	4	2	0	27
0	0	0	1	1	0	0	0	3
0	0	0	0	0	0	0	0	1

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.7 Deaths by Cause, Sex, and Age in the Sub-Saharan Africa Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*668*	*57*	*92*	*93*	*49*	*26*	*9*	*4*	*1*	*331*
All causes	**10,837**	**2,367**	**281**	**529**	**852**	**632**	**412**	**366**	**170**	**5,611**
I. Communicable, maternal, perinatal, and nutritional conditions	***7,747***	***2,252***	***179***	***289***	***603***	***331***	***135***	***73***	***26***	***3,888***
A. Infectious and parasitic diseases	**5,702**	**1,428**	**150**	**277**	**580**	**297**	**100**	**45**	**16**	**2,893**
1. **Tuberculosis**	**317**	**12**	**7**	**49**	**68**	**51**	**19**	**9**	**3**	**218**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**90**	**17**	**0**	**1**	**10**	**17**	**3**	**0**	**0**	**48**
a. Syphilis	87	17	0	1	9	17	3	0	0	47
b. Chlamydia	1	—	—	—	—	—	—	—	—	—
c. Gonorrhea	1	—	—	0	0	0	0	—	—	0
d. Other sexually transmitted diseases	2	0	0	0	0	0	0	0	0	1
3. **HIV/AIDS**	**2,058**	**159**	**48**	**185**	**440**	**148**	**23**	**3**	**0**	**1,007**
4. **Diarrheal diseases**	**712**	**337**	**1**	**2**	**4**	**6**	**6**	**8**	**8**	**373**
5. **Childhood-cluster diseases**	**745**	**308**	**50**	**8**	**4**	**2**	**1**	**0**	**0**	**373**
a. Pertussis	176	88	—	—	—	—	—	—	—	88
b. Poliomyelitis	0	0	—	—	—	—	—	—	—	0
c. Diphtheria	1	1	—	0	—	—	—	—	—	1
d. Measles	447	177	44	3	—	—	—	—	—	224
e. Tetanus	121	43	6	5	4	2	1	0	0	60
6. **Meningitis**	**23**	**5**	**2**	**1**	**2**	**2**	**1**	**0**	**0**	**12**
7. **Hepatitis B**[a]	**21**	**1**	**3**	**1**	**3**	**2**	**1**	**0**	**0**	**12**
Hepatitis C[a]	**8**	**1**	**1**	**0**	**1**	**1**	**0**	**0**	**0**	**5**
8. **Malaria**	**1,093**	**467**	**7**	**9**	**10**	**10**	**7**	**6**	**3**	**518**
9. **Tropical-cluster diseases**	**58**	**3**	**12**	**8**	**7**	**5**	**1**	**1**	**0**	**38**
a. Trypanosomiasis	48	2	11	6	6	5	1	0	0	31
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	2	0	0	0	0	0	1	0	0	1
d. Leishmaniasis	8	1	2	2	1	0	0	0	—	6
e. Lymphatic filariasis	0	0	0	0	0	0	0	0	—	0
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**1**	**—**	**—**	**—**	**0**	**0**	**0**	**0**	**—**	**0**
11. **Dengue**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
14. **Intestinal nematode infections**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
a. Ascariasis	1	0	0	0	0	—	—	—	—	0
b. Trichuriasis	1	—	0	0	0	0	0	0	0	0
c. Hookworm disease	2	0	0	0	0	0	0	0	0	1
Other intestinal infections	0	—	0	0	0	0	0	0	0	0
Other infectious diseases	572	117	18	12	31	52	38	17	1	287
B. Respiratory infections	**1,094**	**439**	**26**	**12**	**22**	**31**	**29**	**23**	**9**	**590**
1. Lower respiratory infections	1,080	435	24	11	21	31	28	23	9	583
2. Upper respiratory infections	13	3	1	0	0	0	1	0	0	6
3. Otitis media	1	0	1	0	0	—	0	—	—	1
C. Maternal conditions	**237**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	60	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	44	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	32	—	—	—	—	—	—	—	—	—
4. Obstructed labor	22	—	—	—	—	—	—	—	—	—
5. Abortion	28	—	—	—	—	—	—	—	—	—
Other maternal conditions	52	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**573**	**332**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**332**
1. Low birthweight	243	141	—	—	—	—	—	—	—	141
2. Birth asphyxia and birth trauma	240	139	—	—	—	—	—	—	—	139
Other perinatal conditions	90	52	—	—	—	—	—	—	—	52
E. Nutritional deficiencies	**140**	**53**	**3**	**0**	**1**	**4**	**5**	**4**	**2**	**73**
1. Protein-energy malnutrition	99	40	2	0	0	2	4	4	2	55
2. Iodine deficiency	3	1	0	0	0	0	0	0	0	1
3. Vitamin A deficiency	18	7	1	0	0	0	0	0	0	8
4. Iron-deficiency anemia	18	5	1	0	0	1	1	0	0	8
Other nutritional disorders	2	1	0	0	0	0	0	0	0	1

Table 3B.7 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
56	*91*	*93*	*51*	*28*	*11*	*5*	*1*	*336*
2,137	**289**	**698**	**678**	**466**	**350**	**384**	**225**	**5,227**
2,046	***221***	***616***	***573***	***231***	***79***	***62***	***31***	***3,859***
1,436	**176**	**449**	**447**	**188**	**57**	**37**	**18**	**2,809**
11	**6**	**30**	**26**	**13**	**9**	**4**	**1**	**99**
12	**0**	**12**	**8**	**6**	**2**	**1**	**0**	**42**
11	0	12	8	6	2	1	0	40
—	—	0	0	0	0	—	—	1
—	—	0	0	0	0	—	—	0
0	0	0	0	0	0	0	0	1
154	**47**	**349**	**374**	**108**	**17**	**4**	**0**	**1,051**
306	**1**	**1**	**2**	**4**	**6**	**8**	**11**	**339**
305	**52**	**8**	**4**	**2**	**1**	**0**	**0**	**372**
88	—	—	—	—	—	—	—	88
0	—	—	—	—	—	—	—	0
1	0	—	—	—	—	—	—	1
175	45	3	—	—	—	—	—	223
42	6	5	4	2	1	0	0	60
4	**4**	**2**	**0**	**1**	**0**	**0**	**0**	**11**
4	**1**	**1**	**1**	**1**	**0**	**0**	**0**	**9**
2	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**3**
518	**7**	**11**	**11**	**12**	**7**	**6**	**4**	**575**
1	**7**	**5**	**3**	**3**	**0**	**0**	**0**	**20**
1	6	4	3	2	0	0	—	17
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	1
0	1	1	0	0	0	0	—	2
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	**—**	**—**	**—**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0	0	—	—	—	—	—	—	0
—	0	0	0	0	0	0	0	0
—	0	0	0	0	0	0	0	1
—	0	0	0	0	0	0	0	0
121	51	29	18	38	14	12	2	285
318	**40**	**39**	**29**	**26**	**19**	**21**	**12**	**504**
317	36	39	28	26	19	21	12	497
2	4	0	0	0	0	0	0	6
0	—	0	0	—	—	—	—	0
—	**0**	**126**	**97**	**14**	**—**	**—**	**—**	**237**
—	—	26	28	5	—	—	—	60
—	—	20	20	4	—	—	—	44
—	0	19	11	1	—	—	—	32
—	—	14	7	0	—	—	—	22
—	—	22	7	—	—	—	—	28
—	—	24	24	4	—	—	—	52
241	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**241**
102	—	—	—	—	—	—	—	102
101	—	—	—	—	—	—	—	101
38	—	—	—	—	—	—	—	38
50	**5**	**1**	**1**	**2**	**4**	**3**	**1**	**67**
34	1	1	1	1	4	3	1	45
1	0	0	0	0	0	0	0	1
8	1	0	0	0	0	0	0	10
7	2	0	0	1	0	0	0	11
1	0	0	0	0	0	0	0	1

(Continues on the following page.)

Table 3B.7 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***2,283***	***65***	***18***	***45***	***102***	***225***	***249***	***279***	***140***	***1,122***
A. Malignant neoplasms	**409**	**2**	**3**	**6**	**16**	**51**	**57**	**57**	**23**	**214**
1. Mouth and oropharynx cancers	19	0	0	0	1	4	4	3	1	13
2. Esophageal cancer	24	0	0	0	1	5	5	3	1	15
3. Stomach cancer	33	0	0	0	1	5	5	4	2	18
4. Colon and rectal cancers	20	0	0	0	1	3	3	3	1	11
5. Liver cancer	46	0	0	1	4	11	8	5	1	31
6. Pancreas cancer	8	0	0	0	0	1	1	1	0	4
7. Trachea, bronchus, and lung cancers	15	0	0	0	1	4	4	2	1	11
8. Melanoma and other skin cancers	8	0	0	0	0	1	1	1	0	4
9. Breast cancer	34	—	—	—	0	0	0	0	0	0
10. Cervix uteri cancer	38	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	3	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	9	—	—	—	—	—	—	—	—	—
13. Prostate cancer	40	0	0	0	0	3	11	18	8	40
14. Bladder cancer	10	0	0	0	0	1	2	2	1	7
15. Lymphomas and multiple myeloma	34	1	2	2	3	4	4	4	2	21
16. Leukemia	14	0	0	1	1	1	1	1	1	7
Other malignant neoplasms	55	1	1	1	2	8	9	8	4	32
B. Other neoplasms	**10**	**1**	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**5**
C. Diabetes mellitus	**82**	**0**	**0**	**1**	**3**	**7**	**8**	**8**	**3**	**30**
D. Endocrine disorders	**28**	**3**	**1**	**1**	**2**	**2**	**1**	**1**	**1**	**12**
E. Neuropsychiatric conditions	**93**	**8**	**5**	**9**	**10**	**9**	**6**	**6**	**3**	**56**
1. Unipolar depressive disorders	0	—	—	—	0	0	—	—	—	0
2. Bipolar affective disorder	—	—	—	—	—	—	—	—	—	—
3. Schizophrenia	0	—	0	—	0	—	0	0	—	0
4. Epilepsy	38	2	2	6	5	4	2	1	1	23
5. Alcohol use disorders	7	—	—	0	2	2	1	1	0	5
6. Alzheimer's and other dementias	7	0	0	0	0	0	0	1	1	4
7. Parkinson's disease	5	0	0	—	0	0	1	1	1	3
8. Multiple sclerosis	0	—	0	0	0	0	0	0	0	0
9. Drug use disorders	4	—	—	1	1	1	0	0	0	3
10. Post-traumatic stress disorder	—	—	—	—	—	—	—	—	—	—
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	0	0	0	0	0	0	0	—	—	0
Other neuropsychiatric disorders	32	5	3	2	2	2	2	1	0	18
F. Sense organ diseases	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	—	—	—	0	—	—	—	—	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	0	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**1,048**	**4**	**3**	**12**	**35**	**91**	**112**	**137**	**76**	**469**
1. Rheumatic heart disease	19	0	1	2	1	1	0	0	0	6
2. Hypertensive heart disease	66	0	0	0	2	5	6	7	4	24
3. Ischemic heart disease	343	0	0	1	7	39	52	58	22	179
4. Cerebrovascular disease	355	0	1	4	11	28	36	44	22	145
5. Inflammatory heart diseases	43	2	1	2	3	4	3	4	2	22
Other cardiovascular diseases	223	1	1	4	11	13	15	24	25	93
H. Respiratory diseases	**253**	**9**	**2**	**5**	**12**	**28**	**35**	**39**	**19**	**149**
1. Chronic obstructive pulmonary disease	116	0	0	1	3	13	20	25	12	74
2. Asthma	26	1	0	1	2	3	3	3	1	13
Other respiratory diseases	112	8	1	4	7	12	12	12	6	62

Table 3B.7 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
54	***18***	***43***	***72***	***211***	***259***	***314***	***190***	***1,161***
2	**3**	**5**	**18**	**53**	**48**	**47**	**19**	**194**
0	0	0	0	1	2	2	1	6
0	0	0	1	2	2	2	1	9
0	0	0	1	4	4	4	2	15
0	0	0	1	2	2	2	1	9
0	0	1	2	4	3	4	1	15
0	0	0	0	1	1	1	0	4
0	0	0	0	1	1	1	0	4
0	0	0	0	1	1	2	1	5
0	0	0	4	11	9	7	3	34
0	0	1	2	12	10	9	2	38
0	0	0	0	1	1	1	0	3
0	0	0	1	3	2	2	1	9
—	—	—	—	—	—	—	—	—
0	0	0	0	1	1	1	0	3
1	2	1	1	2	2	3	1	13
0	0	1	1	2	1	1	1	6
1	1	0	2	5	5	6	3	23
0	**1**	**0**	**0**	**1**	**1**	**1**	**0**	**5**
0	**0**	**1**	**2**	**12**	**16**	**15**	**5**	**52**
4	**0**	**1**	**1**	**3**	**3**	**2**	**1**	**16**
7	**4**	**6**	**4**	**5**	**4**	**5**	**3**	**37**
—	—	0	—	—	—	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	—	0	0	0	—	0
2	2	4	2	2	1	1	1	15
—	—	0	1	1	0	0	—	2
0	0	0	0	0	1	1	1	3
0	—	0	0	0	0	1	1	2
—	—	—	0	0	0	0	0	0
—	—	0	0	0	0	0	0	1
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	—	—	—	0
5	2	2	1	2	1	1	0	14
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
5	**4**	**14**	**26**	**91**	**133**	**180**	**125**	**579**
0	1	3	2	3	1	1	0	13
0	0	0	2	7	10	14	9	42
0	0	1	3	26	46	55	31	163
0	1	3	8	37	53	67	41	209
2	1	2	2	4	4	4	3	21
2	1	6	8	15	19	38	41	130
7	**1**	**5**	**7**	**16**	**22**	**29**	**17**	**104**
0	0	0	1	6	10	15	9	42
0	0	1	1	2	3	3	2	12
6	1	4	5	7	9	11	7	50

(Continues on the following page.)

Table 3B.7 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**164**	**3**	**2**	**7**	**18**	**26**	**18**	**16**	**5**	**95**
1. Peptic ulcer disease	15	0	0	1	2	2	2	1	1	8
2. Cirrhosis of the liver	59	0	0	1	6	13	9	7	2	38
3. Appendicitis	2	0	0	0	0	0	0	0	0	1
Other digestive diseases	88	3	2	5	11	11	8	7	3	48
J. Genitourinary diseases	**107**	**3**	**1**	**3**	**4**	**7**	**10**	**13**	**8**	**48**
1. Nephritis and nephrosis	101	2	1	3	4	7	10	11	7	45
2. Benign prostatic hypertrophy	2	—	—	—	—	0	0	1	1	2
Other genitourinary system diseases	4	0	0	0	0	0	0	1	0	2
K. Skin diseases	**20**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**1**	**6**
L. Musculoskeletal diseases	**7**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**3**
1. Rheumatoid arthritis	1	—	—	0	0	0	0	0	0	0
2. Osteoarthritis	0	—	—	—	—	0	—	0	0	0
3. Gout	0	—	—	—	—	—	—	0	—	0
4. Low back pain	0	—	—	—	0	0	0	0	—	0
Other musculoskeletal disorders	5	0	0	0	0	0	0	1	0	2
M. Congenital anomalies	**63**	**32**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**35**
1. Abdominal wall defect	1	1	—	—	—	—	—	—	—	1
2. Anencephaly	2	1	0	—	—	—	—	—	—	1
3. Anorectal atresia	0	0	0	—	—	—	—	—	—	0
4. Cleft lip	0	0	—	—	—	—	—	—	—	0
5. Cleft palate	0	0	—	—	—	—	—	—	—	0
6. Esophageal atresia	0	0	0	—	—	—	—	—	—	0
7. Renal agenesis	0	0	—	—	—	—	0	—	—	0
8. Down syndrome	5	3	0	0	0	0	—	—	—	3
9. Congenital heart anomalies	20	10	1	0	0	0	0	0	0	11
10.Spina bifida	4	2	0	0	—	—	—	—	—	2
Other congenital anomalies	31	15	1	0	0	0	0	0	0	17
N. Oral conditions	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**0**
1. Dental caries	—	—	—	—	—	—	—	—	—	—
2. Periodontal disease	—	—	—	—	—	—	—	—	—	—
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	0	—	0
III. Injuries	**807**	**51**	**84**	**196**	**147**	**76**	**29**	**14**	**4**	**600**
A. Unintentional injuries	**494**	**48**	**77**	**80**	**65**	**41**	**16**	**9**	**3**	**339**
1. Road traffic accidents	200	12	41	27	28	18	7	4	1	137
2. Poisonings	37	5	4	5	6	3	1	—	—	23
3. Falls	20	1	3	2	2	2	1	1	0	14
4. Fires	44	8	11	1	1	1	1	1	0	24
5. Drownings	66	7	11	11	13	8	1	0	0	50
6. Other unintentional injuries	127	15	8	35	16	9	5	3	1	92
B. Intentional injuries	**313**	**3**	**7**	**116**	**82**	**35**	**12**	**5**	**2**	**261**
1. Self-inflicted injuries	36	—	2	9	7	6	2	1	0	28
2. Violence	141	3	4	53	32	13	4	2	0	111
3. War	136	0	1	53	43	16	7	2	1	123
Other intentional injuries	0	0	0	0	0	0	0	0	0	0

Table 3B.7 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
1	**2**	**6**	**8**	**15**	**15**	**14**	**7**	**69**
0	0	0	1	1	1	2	1	7
0	0	1	2	6	6	4	1	22
—	0	0	0	0	0	0	0	1
1	1	5	5	7	8	8	5	40
2	**1**	**2**	**3**	**12**	**14**	**16**	**9**	**59**
1	1	2	3	11	14	15	8	56
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	1	1	2
0	**0**	**0**	**1**	**3**	**3**	**3**	**3**	**13**
0	**0**	**1**	**1**	**1**	**1**	**1**	**0**	**4**
—	0	—	0	0	0	0	0	1
—	—	—	—	0	0	0	0	0
—	—	—	—	—	0	—	—	0
0	0	0	—	0	0	—	0	0
0	0	1	1	1	0	0	0	3
26	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**28**
1	—	0	—	—	—	—	—	1
1	—	0	—	—	0	—	—	1
0	—	—	—	—	—	—	—	0
0	—	—	—	—	—	—	—	0
0	—	—	—	—	—	—	—	0
—	—	—	—	—	—	—	—	—
0	—	0	—	—	0	—	—	0
1	0	0	—	0	—	—	—	2
8	0	0	0	0	0	0	0	9
2	0	0	0	—	—	—	—	2
13	1	0	0	0	0	0	0	14
0	**—**	**—**	**—**	**—**	**0**	**0**	**0**	**0**
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	—	—	—	—	0	0	0	0
37	**51**	**39**	**32**	**23**	**11**	**8**	**4**	**207**
34	**45**	**25**	**19**	**15**	**8**	**6**	**3**	**155**
7	25	11	8	7	4	2	1	63
2	2	3	3	2	2	1	0	15
1	2	0	0	1	1	1	1	6
10	4	2	2	1	1	1	0	20
4	3	4	1	2	1	0	0	15
11	8	5	5	3	1	1	1	36
3	**6**	**15**	**13**	**9**	**3**	**2**	**1**	**52**
0	0	3	2	2	1	0	0	8
3	5	9	7	4	1	1	0	30
0	1	2	4	4	2	1	1	13
0	0	0	0	0	0	—	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.8 Deaths by Cause, Sex, and Age in High-Income Countries, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*929*	*28*	*60*	*96*	*107*	*88*	*40*	*27*	*10*	*457*
All causes	**7,891**	**41**	**11**	**90**	**192**	**520**	**698**	**1,170**	**1,281**	**4,002**
I. Communicable, maternal, perinatal, and nutritional conditions	***552***	***21***	***1***	***3***	***16***	***24***	***26***	***60***	***117***	***268***
A. Infectious and parasitic diseases	**152**	**2**	**0**	**2**	**13**	**16**	**12**	**18**	**18**	**81**
1. **Tuberculosis**	**16**	**0**	**0**	**0**	**1**	**2**	**2**	**3**	**3**	**10**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Syphilis	0	0	0	0	0	0	0	0	0	0
b. Chlamydia	0	—	—	—	—	—	—	—	—	—
c. Gonorrhea	0	—	0	0	0	—	0	0	0	0
d. Other sexually transmitted diseases	0	0	—	—	0	0	0	0	0	0
3. **HIV/AIDS**	**22**	**0**	**0**	**1**	**9**	**5**	**1**	**0**	**0**	**17**
4. **Diarrheal diseases**	**6**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**2**
5. **Childhood-cluster diseases**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Pertussis	0	0	0	—	—	—	0	—	—	0
b. Poliomyelitis	1	0	0	0	0	0	0	0	0	0
c. Diphtheria	0	0	—	—	0	—	—	0	0	0
d. Measles	1	0	0	0	0	0	—	0	—	0
e. Tetanus	0	0	0	0	0	0	0	0	0	0
6. **Meningitis**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
7. **Hepatitis B**[a]	**5**	**0**	**0**	**0**	**0**	**1**	**1**	**1**	**0**	**3**
Hepatitis C[a]	**12**	**0**	**0**	**0**	**1**	**2**	**1**	**1**	**1**	**7**
8. **Malaria**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
9. **Tropical-cluster diseases**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Trypanosomiasis	0	—	—	—	—	—	0	—	—	0
b. Chagas' disease	0	0	0	0	0	0	0	0	0	0
c. Schistosomiasis	0	0	0	0	0	0	0	0	0	0
d. Leishmaniasis	0	0	0	0	0	0	0	0	0	0
e. Lymphatic filariasis	0	0	—	0	0	0	0	0	0	0
f. Onchocerciasis	0	0	—	—	—	—	—	—	—	0
10. **Leprosy**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11. **Dengue**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12. **Japanese encephalitis**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
13. **Trachoma**	**0**	**0**	**0**	**0**	**—**	**0**	**—**	**—**	**—**	**0**
14. **Intestinal nematode infections**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
a. Ascariasis	0	0	0	0	0	0	0	0	0	0
b. Trichuriasis	0	—	0	—	—	—	—	—	—	0
c. Hookworm disease	0	—	0	—	0	0	—	0	0	0
Other intestinal infections	0	0	0	0	0	0	0	0	0	0
Other infectious diseases	84	1	0	1	2	5	6	11	13	39
B. Respiratory infections	**349**	**1**	**0**	**1**	**2**	**7**	**14**	**41**	**96**	**162**
1. Lower respiratory infections	345	1	0	1	2	7	14	41	95	160
2. Upper respiratory infections	4	0	0	0	0	0	0	0	1	2
3. Otitis media	0	0	0	0	0	0	0	0	0	0
C. Maternal conditions	**1**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	0	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	0	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	0	—	—	—	—	—	—	—	—	—
4. Obstructed labor	0	—	—	—	—	—	—	—	—	—
5. Abortion	0	—	—	—	—	—	—	—	—	—
Other maternal conditions	1	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**32**	**18**	**0**	**0**	**0**	**0**	**0**	**—**	**—**	**18**
1. Low birthweight	10	5	0	—	0	—	0	—	—	5
2. Birth asphyxia and birth trauma	11	6	0	0	0	0	—	—	—	6
Other perinatal conditions	12	7	0	0	0	0	—	—	—	7
E. Nutritional deficiencies	**18**	**0**	**0**	**0**	**0**	**0**	**1**	**1**	**4**	**6**
1. Protein-energy malnutrition	9	0	0	0	0	0	0	1	2	3
2. Iodine deficiency	0	0	0	—	0	0	0	0	0	0
3. Vitamin A deficiency	0	0	0	—	—	—	0	—	0	0
4. Iron-deficiency anemia	7	0	0	0	0	0	0	0	1	2
Other nutritional disorders	2	0	0	0	0	0	0	0	0	1

Table 3B.8 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
27	*57*	*92*	*105*	*90*	*44*	*36*	*21*	*472*
32	**12**	**33**	**98**	**280**	**398**	**923**	**2,114**	**3,890**
16	***3***	***2***	***7***	***11***	***16***	***47***	***182***	***285***
1	**2**	**1**	**5**	**7**	**8**	**16**	**29**	**71**
0	**0**	**0**	**0**	**0**	**1**	**2**	**2**	**6**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	—	0	0	0	0	0	0	0
—	—	—	0	0	0	—	0	0
0	—	0	0	0	—	0	0	0
0	0	0	0	0	0	0	0	0
0	**0**	**1**	**3**	**1**	**0**	**0**	**0**	**5**
0	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**4**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
0	0	0	—	0	—	—	—	0
0	0	0	0	0	0	0	0	0
0	0	—	—	0	—	—	—	0
0	1	0	0	0	—	—	0	1
0	0	0	0	0	0	0	0	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
0	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**2**
0	**0**	**0**	**0**	**1**	**1**	**2**	**1**	**5**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	0	—	0	—	—	—	—	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
—	—	—	0	0	0	0	0	0
—	—	0	—	—	0	—	—	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	0	0	0	0	0	0	0	0
0	0	—	0	—	—	—	—	0
—	—	0	—	—	0	—	—	0
0	0	0	0	0	0	0	0	0
1	1	0	1	3	5	11	22	45
1	**1**	**0**	**1**	**4**	**7**	**29**	**144**	**187**
1	1	0	1	4	7	29	142	185
0	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0
0	**0**	**0**	**1**	**0**	**—**	**0**	**0**	**1**
0	0	0	0	0	—	—	—	0
—	0	0	0	0	—	—	—	0
—	0	0	0	0	—	—	0	0
—	—	0	0	0	—	—	—	0
—	0	0	0	0	—	—	—	0
—	0	0	0	0	—	0	0	1
14	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**14**
4	0	—	—	—	—	—	—	4
5	0	0	—	0	—	0	0	5
5	0	0	0	0	0	0	0	5
0	**0**	**0**	**0**	**0**	**0**	**2**	**9**	**12**
0	0	0	0	0	0	1	4	6
0	0	0	0	0	0	0	0	0
0	0	—	—	—	—	0	0	0
0	0	0	0	0	0	1	4	5
0	0	0	0	0	0	0	1	1

(Continues on the following page.)

Table 3B.8 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***6,868***	***15***	***5***	***24***	***106***	***431***	***638***	***1,074***	***1,127***	***3,420***
A. Malignant neoplasms	**2,066**	**1**	**2**	**7**	**31**	**180**	**284**	**393**	**258**	**1,155**
1. Mouth and oropharynx cancers	41	0	0	0	2	10	8	7	3	30
2. Esophageal cancer	58	0	0	0	1	10	13	13	6	44
3. Stomach cancer	146	0	0	0	2	14	23	30	20	89
4. Colon and rectal cancers	257	0	0	0	3	18	32	46	33	133
5. Liver cancer	102	0	0	0	2	14	21	22	9	69
6. Pancreas cancer	110	0	0	0	1	10	15	19	11	56
7. Trachea, bronchus, and lung cancers	456	0	0	0	5	50	86	115	53	311
8. Melanoma and other skin cancers	30	0	0	0	1	4	4	5	4	18
9. Breast cancer	155	0	—	0	0	0	0	1	0	2
10. Cervix uteri cancer	17	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	27	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	46	—	—	—	—	—	—	—	—	—
13. Prostate cancer	119	0	0	0	0	4	16	44	56	119
14. Bladder cancer	59	0	0	0	0	3	8	16	14	42
15. Lymphomas, and multiple myeloma	115	0	0	1	3	9	14	20	13	60
16. Leukemia	73	0	1	2	2	5	8	13	9	41
Other malignant neoplasms	257	0	1	3	7	28	36	43	25	143
B. Other neoplasms	**57**	**0**	**0**	**0**	**1**	**3**	**5**	**9**	**10**	**28**
C. Diabetes mellitus	**202**	**0**	**0**	**0**	**3**	**12**	**19**	**30**	**26**	**91**
D. Endocrine disorders	**70**	**1**	**0**	**1**	**2**	**5**	**5**	**7**	**9**	**31**
E. Neuropsychiatric conditions	**378**	**1**	**1**	**6**	**13**	**19**	**17**	**38**	**65**	**160**
1. Unipolar depressive disorders	3	0	0	0	0	0	0	0	1	1
2. Bipolar affective disorder	0	0	0	0	0	0	0	0	0	0
3. Schizophrenia	2	0	0	0	0	0	0	0	0	1
4. Epilepsy	9	0	0	1	1	1	1	1	1	5
5. Alcohol use disorders	23	0	0	0	4	8	4	2	1	18
6. Alzheimer's and other dementias	207	0	0	0	0	1	3	17	42	64
7. Parkinson's disease	45	0	0	0	0	0	2	9	13	24
8. Multiple sclerosis	8	0	0	0	0	1	1	0	0	3
9. Drug use disorders	13	0	0	3	5	2	0	0	0	10
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	1	0	0	0	0	0	0	0	0	1
Other neuropsychiatric disorders	68	1	1	2	2	5	6	9	8	33
F. Sense organ diseases	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Glaucoma	0	0	—	0	0	0	0	0	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	0	0	0	0	0	0	0	0	0	0
G. Cardiovascular diseases	**3,039**	**1**	**1**	**5**	**35**	**148**	**224**	**434**	**564**	**1,412**
1. Rheumatic heart disease	17	0	0	0	0	1	1	2	2	5
2. Hypertensive heart disease	129	0	0	0	2	6	7	14	19	48
3. Ischemic heart disease	1,364	0	0	1	16	88	130	231	250	716
4. Cerebrovascular disease	781	0	0	1	6	25	44	101	145	323
5. Inflammatory heart diseases	72	0	0	1	3	7	8	11	10	41
Other cardiovascular diseases	676	1	0	2	8	21	34	74	139	279
H. Respiratory diseases	**477**	**1**	**0**	**1**	**3**	**14**	**37**	**94**	**112**	**262**
1. Chronic obstructive pulmonary disease	297	0	0	0	1	8	24	65	73	171
2. Asthma	28	0	0	0	1	1	2	4	4	12
Other respiratory diseases	152	0	0	1	2	5	11	25	35	79

Table 3B.8 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
13	***5***	***14***	***69***	***248***	***368***	***851***	***1,880***	***3,448***
1	**2**	**5**	**34**	**136**	**172**	**275**	**287**	**911**
0	0	0	0	2	2	3	4	11
0	0	0	0	2	2	4	5	13
0	0	0	2	6	9	17	23	57
0	0	0	2	13	20	37	52	124
0	0	0	1	3	7	12	10	33
0	0	0	1	6	10	19	19	54
0	0	0	4	23	34	50	35	145
0	0	0	1	2	2	3	4	13
0	0	0	11	37	30	37	38	154
0	0	0	3	5	3	3	3	17
—	0	0	1	4	6	8	8	27
0	0	0	2	9	11	14	10	46
—	—	—	—	—	—	—	—	—
0	0	0	0	1	2	5	9	17
0	0	1	2	6	10	18	18	55
0	1	1	2	4	5	9	11	32
0	1	1	4	14	21	35	37	114
0	**0**	**0**	**1**	**2**	**3**	**8**	**14**	**29**
0	**0**	**0**	**2**	**7**	**14**	**34**	**54**	**112**
1	**0**	**1**	**2**	**3**	**4**	**8**	**21**	**40**
1	**1**	**2**	**5**	**10**	**11**	**40**	**148**	**218**
0	0	0	0	0	0	0	1	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
0	0	0	1	1	0	1	1	4
0	0	0	1	2	1	1	0	4
0	0	0	0	1	3	23	117	143
0	0	0	0	0	1	6	13	21
0	0	0	1	2	1	1	0	5
0	0	1	1	1	0	0	0	2
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
1	1	1	2	4	5	8	14	34
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
1	**1**	**3**	**15**	**56**	**111**	**358**	**1,082**	**1,627**
0	0	0	0	1	2	4	5	12
0	0	0	1	3	5	17	54	80
0	0	0	4	23	52	158	412	648
0	0	1	4	16	28	101	307	458
0	0	0	1	3	4	8	15	31
0	0	1	4	11	20	71	289	397
0	**0**	**1**	**2**	**10**	**23**	**62**	**118**	**215**
0	0	0	0	5	15	41	64	127
0	0	0	1	2	2	4	7	15
0	0	0	1	3	6	16	46	73

(Continues on the following page.)

Table 3B.8 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**335**	**1**	**0**	**1**	**14**	**42**	**37**	**42**	**40**	**177**
1. Peptic ulcer disease	27	0	0	0	0	2	2	4	5	13
2. Cirrhosis of the liver	118	0	0	0	10	30	21	14	5	80
3. Appendicitis	1	0	0	0	0	0	0	0	0	1
Other digestive diseases	189	1	0	1	4	11	13	24	30	83
J. Genitourinary diseases	**153**	**0**	**0**	**0**	**1**	**5**	**8**	**20**	**35**	**70**
1. Nephritis and nephrosis	111	0	0	0	1	4	7	16	25	53
2. Benign prostatic hypertrophy	2	—	—	0	0	0	0	0	1	2
Other genitourinary system diseases	40	0	0	0	0	1	1	4	9	15
K. Skin diseases	**15**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**2**	**5**
L. Musculoskeletal diseases	**44**	**0**	**0**	**0**	**1**	**1**	**2**	**4**	**5**	**13**
1. Rheumatoid arthritis	9	0	0	0	0	0	0	1	1	2
2. Osteoarthritis	3	0	0	0	0	0	0	0	0	1
3. Gout	0	—	0	0	0	0	0	0	0	0
4. Low back pain	2	0	0	0	0	0	0	0	0	1
Other musculoskeletal disorders	30	0	0	0	0	1	1	3	4	9
M. Congenital anomalies	**30**	**10**	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**16**
1. Abdominal wall defect	0	0	0	0	0	0	0	0	0	0
2. Anencephaly	1	0	0	0	0	0	0	0	0	0
3. Anorectal atresia	0	0	0	0	0	0	0	0	0	0
4. Cleft lip	0	0	0	0	0	0	0	0	0	0
5. Cleft palate	0	0	0	0	0	0	0	0	0	0
6. Esophageal atresia	0	0	0	0	0	0	0	0	0	0
7. Renal agenesis	1	0	0	0	0	0	0	0	0	0
8. Down syndrome	2	0	0	0	0	0	0	0	0	1
9. Congenital heart anomalies	13	4	0	1	1	1	0	0	0	7
10. Spina bifida	0	0	0	0	0	0	0	0	0	0
Other congenital anomalies	13	5	0	0	0	0	0	0	0	7
N. Oral conditions	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1. Dental caries	0	—	—	—	—	0	—	0	0	0
2. Periodontal disease	0	—	—	0	0	0	0	0	0	0
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	0	0	0	0	0	0	0	0	0	0
III. Injuries	***471***	***4***	***5***	***63***	***70***	***65***	***34***	***35***	***36***	***314***
A. Unintentional injuries	**321**	**4**	**4**	**40**	**39**	**36**	**22**	**26**	**31**	**202**
1. Road traffic accidents	121	1	2	28	20	15	8	7	4	86
2. Poisonings	21	0	0	3	7	4	1	0	0	15
3. Falls	71	0	0	1	3	5	4	7	13	34
4. Fires	9	0	0	1	1	1	1	1	1	6
5. Drownings	16	1	1	2	2	2	1	1	1	11
6. Other unintentional injuries	82	1	1	5	7	9	7	9	11	49
B. Intentional injuries	**151**	**1**	**1**	**23**	**31**	**29**	**12**	**9**	**6**	**112**
1. Self-inflicted injuries	126	0	0	16	25	27	12	9	6	94
2. Violence	24	1	0	7	5	3	1	0	0	17
3. War	0	0	0	0	0	0	0	0	0	0
Other intentional injuries	0	0	0	0	0	0	0	0	0	0

Table 3B.8 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
0	**0**	**1**	**6**	**16**	**18**	**38**	**79**	**158**
0	0	0	0	1	1	3	9	14
0	0	0	3	10	8	10	6	37
0	0	0	0	0	0	0	0	1
0	0	0	2	6	9	25	64	106
0	**0**	**0**	**1**	**3**	**7**	**19**	**53**	**83**
0	0	0	1	3	5	14	35	58
—	—	—	—	—	—	—	—	—
0	0	0	0	1	1	5	18	25
0	**0**	**0**	**0**	**0**	**1**	**2**	**7**	**10**
0	**0**	**0**	**1**	**2**	**3**	**8**	**16**	**31**
0	0	0	0	0	1	3	3	7
0	0	0	0	0	0	0	2	2
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
0	0	0	1	2	2	4	11	21
8	**1**	**1**	**1**	**1**	**1**	**1**	**1**	**14**
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	1
3	0	0	1	0	0	0	0	6
0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	6
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
—	—	—	—	0	—	—	0	0
—	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	0
3	***4***	***17***	***21***	***22***	***14***	***24***	***52***	***157***
2	**3**	**11**	**11**	**12**	**10**	**20**	**49**	**119**
1	2	8	6	6	4	5	3	35
0	0	1	2	2	0	0	1	6
0	0	0	1	1	2	6	26	37
0	0	0	0	1	0	1	1	4
0	0	0	0	1	1	1	1	5
1	1	1	1	3	3	6	17	32
0	**0**	**6**	**10**	**10**	**5**	**4**	**3**	**38**
0	0	4	7	8	4	4	3	32
0	0	2	2	1	0	0	0	7
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

Table 3B.9 Deaths by Cause, Sex, and Age in the World, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total[a]
Population (millions)	*6,148*	*317*	*623*	*808*	*653*	*415*	*164*	*88*	*25*	*3,093*
All causes	**56,242**	**5,448**	**744**	**1,925**	**2,978**	**4,518**	**4,767**	**5,546**	**3,630**	**29,555**
I. Communicable, maternal, perinatal, and nutritional conditions	***18,166***	***4,858***	***376***	***588***	***1,166***	***877***	***555***	***529***	***386***	***9,335***
A. Infectious and parasitic diseases	**10,838**	**2,362**	**296**	**541**	**1,099**	**750**	**360**	**267**	**129**	**5,805**
1. **Tuberculosis**	**1,606**	**22**	**16**	**138**	**257**	**282**	**186**	**118**	**34**	**1,053**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**177**	**31**	**0**	**2**	**11**	**26**	**10**	**6**	**3**	**89**
a. Syphilis	155	30	0	1	10	23	10	6	3	83
b. Chlamydia	9	—	—	—	—	—	—	—	—	—
c. Gonorrhea	1	—	0	0	0	0	0	0	0	0
d. Other sexually transmitted diseases	12	1	0	0	1	4	0	0	0	6
3. **HIV/AIDS**	**2,574**	**173**	**52**	**260**	**649**	**226**	**30**	**4**	**0**	**1,394**
4. **Diarrheal diseases**	**1,783**	**837**	**3**	**6**	**12**	**15**	**15**	**20**	**24**	**932**
5. **Childhood-cluster diseases**	**1,363**	**524**	**110**	**24**	**11**	**6**	**3**	**1**	**1**	**680**
a. Pertussis	301	150	0	—	—	—	0	—	—	150
b. Poliomyelitis[b]	1	0	0	0	0	0	0	0	0	0
c. Diphtheria	6	3	0	0	0	0	0	0	0	3
d. Measles	763	277	91	11	0	0	0	0	—	379
e. Tetanus	293	94	18	13	11	6	3	1	1	147
6. **Meningitis**	**173**	**30**	**14**	**12**	**10**	**10**	**5**	**6**	**3**	**89**
7. **Hepatitis B[c]**	**100**	**3**	**4**	**8**	**17**	**23**	**8**	**5**	**2**	**69**
Hepatitis C[c]	**51**	**1**	**1**	**3**	**7**	**12**	**5**	**3**	**1**	**33**
8. **Malaria**	**1,208**	**521**	**7**	**10**	**11**	**11**	**7**	**7**	**4**	**579**
9. **Tropical-cluster diseases**	**128**	**4**	**21**	**15**	**13**	**13**	**7**	**4**	**1**	**78**
a. Trypanosomiasis	48	2	11	6	6	5	1	0	0	31
b. Chagas' disease	14	0	0	0	1	2	2	1	1	8
c. Schistosomiasis	14	0	0	0	1	3	3	2	0	9
d. Leishmaniasis	51	2	10	8	5	3	1	1	0	30
e. Lymphatic filariasis	0	0	0	0	0	0	0	0	0	0
f. Onchocerciasis	0	0	—	—	—	—	—	—	—	0
10. **Leprosy**	**6**	**0**	**0**	**0**	**1**	**1**	**1**	**1**	**0**	**4**
11. **Dengue**	**19**	**2**	**5**	**0**	**0**	**0**	**0**	**0**	**0**	**9**
12. **Japanese encephalitis**	**14**	**2**	**0**	**1**	**2**	**0**	**0**	**0**	**0**	**7**
13. **Trachoma**	**0**	**0**	**0**	**0**	**—**	**0**	**—**	**0**	**—**	**0**
14. **Intestinal nematode infections**	**12**	**1**	**3**	**0**	**0**	**1**	**0**	**0**	**0**	**6**
a. Ascariasis	3	0	1	0	0	0	0	0	0	1
b. Trichuriasis	3	0	1	0	0	0	0	0	0	2
c. Hookworm disease	3	0	0	0	0	0	0	0	0	2
Other intestinal infections	2	1	0	0	0	0	0	0	0	1
Other infectious diseases	1,624	211	59	63	99	122	82	91	54	783
B. Respiratory infections	**3,830**	**1,004**	**58**	**37**	**56**	**101**	**182**	**244**	**240**	**1,923**
1. Lower respiratory infections	3,753	990	55	35	54	97	177	239	236	1,884
2. Upper respiratory infections	73	14	2	2	2	4	5	5	4	37
3. Otitis media	4	0	1	0	0	0	0	0	0	2
C. Maternal conditions	**508**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	141	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	75	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	71	—	—	—	—	—	—	—	—	—
4. Obstructed labor	43	—	—	—	—	—	—	—	—	—
5. Abortion	66	—	—	—	—	—	—	—	—	—
Other maternal conditions	111	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[d]	**2,522**	**1,399**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**1,399**
1. Low birthweight	1,301	709	0	—	0	—	0	—	—	709
2. Birth asphyxia and birth trauma	739	432	0	0	0	0	—	—	—	432
Other perinatal conditions	482	258	0	0	0	0	—	0	—	258
E. Nutritional deficiencies	**468**	**93**	**22**	**10**	**11**	**26**	**13**	**18**	**16**	**208**
1. Protein-energy malnutrition	250	70	15	4	3	7	8	9	9	125
2. Iodine deficiency	7	2	1	0	0	0	0	0	0	3
3. Vitamin A deficiency	23	7	2	0	0	1	0	0	0	11
4. Iron-deficiency anemia	133	9	3	4	6	15	2	3	3	46
Other nutritional disorders	56	5	1	1	1	3	3	6	4	24

Table 3B.9 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
301	*589*	*774*	*635*	*415*	*180*	*115*	*47*	*3,055*
5,155	**750**	**1,610**	**1,928**	**2,802**	**3,358**	**5,242**	**5,843**	**26,687**
4,571	***454***	***952***	***966***	***523***	***373***	***455***	***535***	***8,830***
2,407	**350**	**630**	**672**	**406**	**213**	**207**	**147**	**5,033**
18	**17**	**106**	**135**	**117**	**80**	**58**	**22**	**552**
37	**0**	**13**	**10**	**14**	**7**	**4**	**1**	**88**
37	0	12	8	6	4	4	1	72
—	—	0	1	6	1	0	0	9
0	—	0	0	0	0	0	0	1
0	0	0	1	2	1	1	0	6
166	**51**	**385**	**426**	**129**	**20**	**4**	**0**	**1,180**
763	**3**	**3**	**5**	**10**	**14**	**21**	**33**	**851**
525	**112**	**24**	**11**	**6**	**3**	**2**	**1**	**684**
151	0	0	—	0	0	—	—	151
0	0	0	0	0	0	0	0	0
2	1	0	0	0	0	0	0	3
279	93	11	0	0	0	—	0	383
93	18	13	11	6	3	1	1	146
35	**18**	**9**	**6**	**5**	**4**	**4**	**2**	**84**
5	**2**	**5**	**4**	**6**	**3**	**3**	**2**	**31**
2	**1**	**2**	**2**	**3**	**3**	**3**	**2**	**17**
566	**8**	**12**	**12**	**13**	**8**	**7**	**4**	**629**
4	**15**	**10**	**6**	**7**	**4**	**3**	**2**	**50**
1	6	4	3	3	0	0	—	17
0	0	0	1	2	1	1	1	7
0	0	0	0	1	1	2	1	5
3	9	5	2	1	1	0	0	21
0	0	0	0	0	0	0	0	0
—	—	0	—	—	0	—	—	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
2	**6**	**1**	**0**	**0**	**0**	**0**	**0**	**10**
4	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**7**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
2	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**6**
1	1	0	0	0	0	0	0	2
0	1	0	0	0	0	0	0	1
—	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
277	115	59	54	94	67	98	77	841
940	**79**	**57**	**46**	**61**	**138**	**226**	**359**	**1,906**
925	74	56	45	60	135	223	351	1,869
15	5	1	1	1	3	3	8	36
0	0	0	0	0	0	0	0	1
0	**0**	**257**	**233**	**18**	**0**	**0**	**0**	**508**
0	0	63	72	7	—	—	—	141
—	0	37	35	4	—	—	—	75
—	0	41	28	2	—	—	0	71
—	—	26	17	0	—	—	—	43
—	0	44	22	0	—	—	—	66
—	0	47	60	5	0	0	0	111
1,122	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1,123**
591	0	—	—	—	—	—	—	591
307	0	0	—	0	—	0	0	307
225	0	0	0	0	0	0	0	225
101	**25**	**8**	**16**	**37**	**22**	**21**	**29**	**261**
69	17	2	3	5	7	8	14	125
3	0	0	0	0	0	0	0	3
9	2	0	0	0	0	0	0	12
11	5	5	13	30	12	5	7	88
9	1	0	0	2	3	9	7	33

(Continues on the following page.)

Table 3B.9 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***32,891***	***431***	***121***	***363***	***939***	***3,005***	***3,927***	***4,817***	***3,134***	***16,737***
A. Malignant neoplasms	**7,021**	**19**	**27**	**75**	**217**	**851**	**1,118**	**1,102**	**508**	**3,917**
1. Mouth and oropharynx cancers	312	0	0	4	17	64	71	44	16	217
2. Esophageal cancer	438	0	0	1	14	69	97	75	23	280
3. Stomach cancer	842	0	0	5	27	124	153	147	62	519
4. Colon and rectal cancers	614	0	0	4	18	57	85	98	55	318
5. Liver cancer	607	1	1	8	40	136	118	91	26	420
6. Pancreas cancer	227	0	0	0	5	28	34	35	16	119
7. Trachea, bronchus, and lung cancers	1,227	0	0	2	29	188	291	275	93	879
8. Melanoma and other skin cancers	65	0	0	1	3	8	8	9	6	35
9. Breast cancer	473	0	0	0	0	1	1	1	1	3
10. Cervix uteri cancer	235	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	71	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	132	—	—	—	—	—	—	—	—	—
13. Prostate cancer	264	0	0	0	1	12	51	108	91	264
14. Bladder cancer	175	0	0	0	2	15	32	45	29	123
15. Lymphomas and multiple myeloma	331	2	7	12	18	32	37	39	21	167
16. Leukemia	263	8	12	24	14	21	24	27	15	146
Other malignant neoplasms	746	8	6	12	29	97	116	107	54	428
B. Other neoplasms	**146**	**2**	**2**	**5**	**6**	**13**	**14**	**18**	**13**	**73**
C. Diabetes mellitus	**960**	**1**	**1**	**8**	**21**	**88**	**111**	**124**	**73**	**428**
D. Endocrine disorders	**240**	**21**	**4**	**7**	**10**	**15**	**13**	**18**	**18**	**107**
E. Neuropsychiatric conditions	**1,079**	**26**	**16**	**48**	**89**	**88**	**53**	**121**	**117**	**558**
1. Unipolar depressive disorders	13	0	0	0	2	2	1	0	1	6
2. Bipolar affective disorder	1	0	0	0	0	0	0	0	0	0
3. Schizophrenia	23	0	0	0	4	4	1	1	1	11
4. Epilepsy	125	12	7	15	15	10	5	4	2	70
5. Alcohol use disorders	84	0	0	5	20	27	13	6	2	72
6. Alzheimer's and other dementias	380	1	0	0	1	3	8	56	71	141
7. Parkinson's disease	95	0	0	0	1	1	4	20	21	49
8. Multiple sclerosis	16	0	0	0	1	2	1	1	0	6
9. Drug use disorders	86	0	0	13	33	21	2	0	0	70
10. Post-traumatic stress disorder	0	0	0	0	0	0	0	0	0	0
11. Obsessive-compulsive disorder	—	—	—	—	—	—	—	—	—	—
12. Panic disorder	—	—	—	—	—	—	—	—	—	—
13. Insomnia (primary)	—	—	—	—	—	—	—	—	—	—
14. Migraine	—	—	—	—	—	—	—	—	—	—
15. Mental retardation, lead-caused	6	1	1	1	0	0	0	0	0	3
Other neuropsychiatric disorders	251	12	8	12	11	17	18	32	20	130
F. Sense organ diseases	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
1. Glaucoma	0	0	—	0	0	0	0	0	0	0
2. Cataracts	—	—	—	—	—	—	—	—	—	—
3. Vision disorders, age-related	—	—	—	—	—	—	—	—	—	—
4. Hearing loss, adult onset	—	—	—	—	—	—	—	—	—	—
Other sense organ disorders	3	0	0	0	0	0	0	0	0	2
G. Cardiovascular diseases	**16,394**	**39**	**24**	**109**	**355**	**1,318**	**1,894**	**2,481**	**1,733**	**7,953**
1. Rheumatic heart disease	324	7	5	18	17	29	25	24	11	136
2. Hypertensive heart disease	889	1	1	4	19	71	104	126	83	409
3. Ischemic heart disease	7,063	3	3	27	160	707	947	1,160	717	3,726
4. Cerebrovascular disease	5,390	7	5	22	74	353	619	859	555	2,494
5. Inflammatory heart diseases	391	7	2	10	21	39	39	49	37	204
Other cardiovascular diseases	2,337	13	8	28	64	119	160	263	330	983
H. Respiratory diseases	**3,603**	**34**	**9**	**24**	**58**	**250**	**405**	**632**	**454**	**1,866**
1. Chronic obstructive pulmonary disease	2,676	2	0	2	17	175	322	515	348	1,380
2. Asthma	233	2	4	11	19	30	21	20	11	119
Other respiratory diseases	694	30	5	12	22	45	62	97	95	368

Table 3B.9 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
432	***128***	***299***	***653***	***2,008***	***2,834***	***4,630***	***5,169***	***16,153***
19	**23**	**59**	**228**	**660**	**709**	**825**	**580**	**3,104**
0	0	1	5	22	24	24	18	95
0	0	1	5	34	44	46	27	158
0	0	4	23	58	70	96	72	323
0	0	2	15	45	62	87	85	296
1	1	5	15	40	46	53	26	187
0	0	0	4	16	24	35	28	108
0	1	1	15	69	92	114	55	347
0	0	1	3	6	6	8	8	30
0	0	2	55	145	104	94	69	470
0	0	11	22	73	62	47	20	235
0	0	0	4	14	17	21	15	71
0	1	3	11	34	33	33	19	132
—	—	—	—	—	—	—	—	—
1	0	0	3	6	10	16	17	53
3	6	8	13	25	33	43	32	164
8	10	13	14	18	16	21	18	117
6	5	6	22	56	66	85	71	318
2	**2**	**3**	**6**	**13**	**11**	**16**	**20**	**73**
2	**2**	**6**	**16**	**84**	**135**	**167**	**121**	**532**
22	**3**	**8**	**12**	**15**	**16**	**22**	**35**	**133**
20	**16**	**26**	**32**	**44**	**36**	**121**	**226**	**520**
0	0	0	1	3	1	0	1	7
0	0	0	0	0	0	0	0	1
0	0	0	2	4	2	2	1	11
9	8	13	8	7	3	3	3	55
0	0	0	3	5	2	2	0	12
1	0	1	1	3	8	63	164	240
0	0	0	0	1	3	17	25	46
0	0	0	2	3	2	2	1	9
0	0	3	7	5	0	0	0	15
0	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	1	1	0	0	0	0	0	3
9	7	8	7	13	15	32	30	120
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
—	—	—	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	2
45	**27**	**94**	**206**	**779**	**1,424**	**2,633**	**3,233**	**8,441**
8	8	19	21	36	33	39	24	188
1	1	3	13	55	91	149	168	480
2	2	27	72	312	633	1,069	1,220	3,338
5	5	13	50	254	492	970	1,106	2,896
6	3	7	10	23	28	51	60	187
23	8	25	41	99	147	355	655	1,354
30	**9**	**22**	**46**	**183**	**272**	**545**	**629**	**1,736**
2	0	1	13	127	214	453	485	1,296
2	4	12	20	28	16	17	17	115
26	5	9	13	28	42	74	127	325

(Continues on the following page.)

Table 3B.9 Continued

Cause	Male									
	Total	0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**1,935**	**48**	**17**	**49**	**137**	**294**	**219**	**198**	**114**	**1,075**
1. Peptic ulcer disease	261	3	2	7	18	42	31	32	19	153
2. Cirrhosis of the liver	771	8	4	17	72	173	115	80	25	493
3. Appendicitis	21	0	1	1	1	3	2	2	1	11
Other digestive diseases	883	37	11	24	45	77	71	85	68	418
J. Genitourinary diseases	**830**	**11**	**7**	**22**	**37**	**75**	**87**	**107**	**87**	**433**
1. Nephritis and nephrosis	663	9	6	19	32	62	68	80	62	338
2. Benign prostatic hypertrophy	31	—	—	0	1	5	6	10	9	31
Other genitourinary system diseases	136	2	1	2	4	9	13	17	17	65
K. Skin diseases	**67**	**1**	**0**	**1**	**3**	**4**	**4**	**6**	**6**	**26**
L. Musculoskeletal diseases	**105**	**1**	**1**	**2**	**3**	**6**	**6**	**10**	**9**	**37**
1. Rheumatoid arthritis	25	0	0	0	0	1	2	2	1	7
2. Osteoarthritis	5	0	0	0	0	0	0	1	1	2
3. Gout	1	0	0	0	0	0	0	0	0	1
4. Low back pain	3	0	0	0	0	0	0	0	0	2
Other musculoskeletal disorders	71	1	1	2	2	4	4	6	6	25
M. Congenital anomalies	**507**	**227**	**11**	**13**	**4**	**3**	**2**	**1**	**1**	**262**
1. Abdominal wall defect	4	2	0	0	0	0	0	0	0	2
2. Anencephaly	19	9	0	0	0	0	0	0	0	9
3. Anorectal atresia	1	1	0	0	0	0	0	0	0	1
4. Cleft lip	0	0	0	0	0	0	0	0	0	0
5. Cleft palate	1	1	0	0	0	0	0	0	0	1
6. Esophageal atresia	1	1	0	0	0	0	0	0	0	1
7. Renal agenesis	2	1	0	0	0	0	0	0	0	1
8. Down syndrome	24	8	1	2	0	1	0	0	0	12
9. Congenital heart anomalies	269	116	6	8	2	1	1	1	0	135
10. Spina bifida	24	11	0	0	0	0	0	0	0	12
Other congenital anomalies	161	78	4	3	1	1	1	1	0	88
N. Oral conditions	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1. Dental caries	0	—	—	—	—	0	—	0	0	0
2. Periodontal disease	0	—	—	0	0	0	0	0	0	0
3. Edentulism	—	—	—	—	—	—	—	—	—	—
Other oral diseases	2	0	0	0	0	0	0	0	0	1
III. Injuries	***5,186***	***158***	***247***	***974***	***872***	***636***	***284***	***200***	***111***	***3,483***
A. Unintentional injuries	**3,535**	**151**	**227**	**551**	**518**	**422**	**196**	**145**	**87**	**2,296**
1. Road traffic accidents	1,189	29	84	246	224	158	65	44	17	867
2. Poisonings	349	9	11	38	59	68	27	10	4	226
3. Falls	387	10	13	29	36	43	31	37	34	234
4. Fires	310	18	17	24	25	16	8	7	3	119
5. Drownings	385	34	58	68	45	32	12	8	4	263
6. Other unintentional injuries	914	51	44	146	128	104	52	39	25	588
B. Intentional injuries	**1,651**	**8**	**21**	**423**	**355**	**213**	**89**	**54**	**24**	**1,187**
1. Self-inflicted injuries	875	0	9	153	149	120	59	40	17	547
2. Violence	556	7	10	186	136	68	20	10	5	442
3. War	208	0	2	80	66	24	10	3	2	187
Other intentional injuries	13	1	0	3	3	1	1	1	0	10

Table 3B.9 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
68	**27**	**48**	**67**	**148**	**141**	**181**	**181**	**860**
3	1	4	9	19	19	25	27	108
17	8	15	27	70	58	56	26	278
0	0	1	1	2	2	2	2	9
48	17	27	30	57	62	97	127	465
9	**7**	**17**	**27**	**65**	**73**	**94**	**105**	**396**
7	6	14	22	56	63	77	78	325
—	—	—	—	—	—	—	—	—
1	1	3	5	8	10	17	27	71
1	**1**	**1**	**3**	**5**	**7**	**10**	**15**	**42**
1	**1**	**4**	**6**	**9**	**9**	**15**	**23**	**68**
0	0	0	1	3	3	6	4	17
0	0	0	0	0	0	1	2	3
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	1	1
1	1	4	5	6	5	8	16	46
212	**11**	**10**	**4**	**3**	**1**	**2**	**1**	**245**
2	0	0	0	0	0	0	0	2
10	0	0	0	0	0	0	0	10
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	0	1
7	1	2	0	1	0	0	0	12
115	7	7	3	1	1	1	1	134
12	0	0	0	0	0	0	0	12
64	3	2	1	1	1	1	1	73
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
—	—	—	—	0	—	—	0	0
—	0	0	0	0	0	0	0	0
—	—	—	—	—	—	—	—	—
0	0	0	0	0	0	0	0	1
151	***168***	***359***	***309***	***271***	***150***	***156***	***139***	***1,703***
145	**151**	**223**	**190**	**178**	**108**	**121**	**122**	**1,238**
23	50	61	63	60	28	25	12	323
7	10	17	24	28	23	10	5	124
7	8	9	9	16	15	35	54	154
23	18	66	39	19	9	10	7	191
25	31	21	13	11	7	7	5	122
60	35	49	42	44	26	32	38	326
7	**16**	**136**	**118**	**92**	**42**	**36**	**17**	**465**
0	6	102	83	66	30	27	14	328
6	9	30	30	21	9	7	2	114
0	1	4	5	5	3	1	1	20
0	0	1	0	1	0	0	0	3

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. World totals for males and females include residual populations not included in the World Bank regions.

b. For East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean regions, these figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994, 2000, and 2002, respectively.

c. Does not include liver cancer and cirrhosis deaths resulting from chronic hepatitis virus infection.

d. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of deaths occurring in the perinatal period.

ANNEX 3C: DALYs(3,0) by Cause, Sex, Age, and Region, 2001

Table 3C.1 DALYs(3,0) by Cause, Sex, and Age in Low- and Middle-Income Countries, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*5,219*	*288*	*563*	*712*	*545*	*326*	*124*	*61*	*15*	*2,636*
All causes	**1,386,709**	**217,652**	**42,491**	**97,880**	**106,062**	**114,028**	**74,490**	**49,024**	**14,065**	**715,692**
I. Communicable, maternal, perinatal, and nutritional conditions	***552,376***	***169,032***	***16,353***	***22,553***	***32,261***	***18,503***	***7,975***	***4,567***	***1,387***	***272,631***
A. Infectious and parasitic diseases	**320,663**	**78,874**	**12,391**	**20,370**	**30,127**	**15,899**	**5,391**	**2,551**	**623**	**166,227**
1. **Tuberculosis**	**35,874**	**730**	**615**	**4,394**	**6,966**	**5,933**	**2,771**	**1,162**	**188**	**22,760**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**9,338**	**1,502**	**19**	**703**	**537**	**505**	**145**	**55**	**16**	**3,483**
a. Syphilis	4,122	1,004	2	105	267	428	140	52	15	2,014
b. Chlamydia	2,438	34	5	154	32	1	0	—	—	227
c. Gonorrhea	2,550	448	12	441	216	7	1	0	0	1,125
d. Other sexually transmitted diseases	228	15	0	3	22	69	4	2	1	117
3. **HIV/AIDS**	**70,796**	**5,322**	**1,570**	**8,834**	**16,592**	**4,497**	**424**	**40**	**1**	**37,280**
4. **Diarrheal diseases**	**58,697**	**27,757**	**691**	**528**	**564**	**463**	**270**	**203**	**115**	**30,592**
5. **Childhood-cluster diseases**	**43,131**	**16,976**	**3,305**	**684**	**278**	**126**	**35**	**12**	**6**	**21,422**
a. Pertussis	11,403	5,623	49	—	—	—	0	—	—	5,672
b. Poliomyelitis[a]	136	15	8	25	17	4	0	0	0	69
c. Diphtheria	164	76	6	1	1	1	0	0	0	86
d. Measles	23,091	8,432	2,716	302	0	0	0	—	—	11,450
e. Tetanus	8,336	2,831	526	356	260	121	34	12	5	4,145
6. **Meningitis**	**5,475**	**1,308**	**472**	**352**	**244**	**206**	**73**	**54**	**14**	**2,723**
7. **Hepatitis B[b]**	**2,082**	**92**	**108**	**225**	**398**	**430**	**111**	**38**	**9**	**1,411**
Hepatitis C[b]	**844**	**31**	**44**	**82**	**163**	**182**	**47**	**17**	**4**	**570**
8. **Malaria**	**39,961**	**17,344**	**497**	**455**	**384**	**276**	**125**	**70**	**20**	**19,172**
9. **Tropical-cluster diseases**	**10,094**	**358**	**1,918**	**2,175**	**1,300**	**695**	**160**	**62**	**13**	**6,680**
a. Trypanosomiasis	1,333	67	322	189	149	104	9	3	0	844
b. Chagas' disease	584	0	0	125	62	67	32	12	4	303
c. Schistosomiasis	1,525	88	279	208	143	113	58	25	5	920
d. Leishmaniasis	1,757	88	382	306	171	66	19	6	0	1,038
e. Lymphatic filariasis	4,455	106	914	1,310	704	261	17	5	1	3,319
f. Onchocerciasis	439	7	20	37	71	84	25	10	3	257
10. **Leprosy**	**191**	**7**	**19**	**16**	**23**	**29**	**11**	**8**	**1**	**115**
11. **Dengue**	**529**	**61**	**143**	**12**	**9**	**6**	**3**	**2**	**1**	**238**
12. **Japanese encephalitis**	**598**	**90**	**67**	**46**	**65**	**11**	**3**	**2**	**1**	**285**
13. **Trachoma**	**2,620**	**2**	**2**	**23**	**152**	**211**	**150**	**88**	**21**	**649**
14. **Intestinal nematode infections**	**2,339**	**228**	**910**	**12**	**8**	**10**	**6**	**3**	**1**	**1,178**
a. Ascariasis	1,153	112	462	1	0	0	0	0	0	574
b. Trichuriasis	489	45	205	1	1	1	1	0	0	253
c. Hookworm disease	634	56	237	10	6	8	5	2	1	323
Other intestinal infections	63	16	6	1	1	2	1	0	0	27
Other infectious diseases	38,095	7,065	2,010	1,829	2,442	2,318	1,058	735	213	17,669
B. Respiratory infections	**86,710**	**32,320**	**2,475**	**1,080**	**1,356**	**1,878**	**2,299**	**1,829**	**698**	**43,936**
1. Lower respiratory infections	83,606	31,654	1,930	1,006	1,274	1,799	2,227	1,786	681	42,357
2. Upper respiratory infections	1,680	425	67	64	71	76	71	43	17	833
3. Otitis media	1,424	241	478	11	11	3	2	0	0	747
C. Maternal conditions	**26,383**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	3,922	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	5,267	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	1,889	—	—	—	—	—	—	—	—	—
4. Obstructed labor	2,495	—	—	—	—	—	—	—	—	—
5. Abortion	3,502	—	—	—	—	—	—	—	—	—
Other maternal conditions	9,308	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**89,068**	**48,595**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**48,596**
1. Low birthweight	42,597	22,984	0	—	0	—	0	—	—	22,984
2. Birth asphyxia and birth trauma	31,429	17,646	0	0	0	0	—	—	—	17,646
Other perinatal conditions	15,043	7,965	0	0	0	0	—	0	—	7,966

Table 3C.1 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
274	*533*	*682*	*530*	*326*	*136*	*78*	*25*	*2,583*
206,246	**41,746**	**97,168**	**85,867**	**89,704**	**67,948**	**58,445**	**23,893**	**671,017**
160,933	***18,395***	***43,617***	***30,916***	***12,740***	***6,393***	***4,809***	***1,944***	***279,745***
80,661	**13,212**	**23,628**	**19,916**	**9,880**	**3,908**	**2,474**	**758**	**154,436**
654	**659**	**3,386**	**3,752**	**2,596**	**1,307**	**639**	**121**	**13,114**
1,692	**69**	**2,742**	**887**	**304**	**108**	**47**	**5**	**5,855**
1,215	3	407	244	127	65	42	4	2,107
33	49	1,674	307	127	21	0	0	2,211
433	17	651	315	7	2	0	0	1,426
10	0	10	22	43	19	5	1	111
5,142	**1,543**	**12,402**	**11,328**	**2,738**	**312**	**49**	**1**	**33,516**
25,568	**654**	**424**	**398**	**378**	**281**	**244**	**159**	**28,105**
17,133	**3,391**	**708**	**285**	**133**	**39**	**14**	**6**	**21,709**
5,682	49	0	—	0	0	—	—	5,731
15	7	24	17	4	0	0	0	68
61	16	0	0	0	0	0	0	78
8,544	2,781	315	—	0	0	—	—	11,641
2,830	538	368	268	129	38	14	6	4,191
1,474	**591**	**289**	**157**	**120**	**68**	**41**	**12**	**2,752**
163	**50**	**145**	**106**	**122**	**48**	**26**	**10**	**670**
62	**19**	**57**	**44**	**53**	**22**	**13**	**4**	**273**
18,795	**500**	**516**	**399**	**321**	**145**	**87**	**26**	**20,789**
295	**952**	**939**	**497**	**548**	**108**	**58**	**17**	**3,414**
37	187	121	79	57	6	2	0	490
0	0	138	46	56	24	13	5	282
59	190	151	92	57	23	24	9	606
115	298	192	58	34	17	4	0	719
77	256	305	171	295	22	8	1	1,136
7	20	32	51	49	15	7	2	183
9	**18**	**13**	**15**	**10**	**7**	**4**	**1**	**76**
70	**176**	**19**	**11**	**7**	**4**	**3**	**1**	**291**
144	**100**	**32**	**24**	**8**	**4**	**2**	**0**	**313**
2	**5**	**50**	**441**	**598**	**470**	**313**	**93**	**1,971**
243	**886**	**10**	**5**	**7**	**5**	**2**	**1**	**1,161**
125	453	0	0	0	0	0	0	579
39	195	1	0	1	0	0	0	236
54	231	8	5	6	4	2	0	310
25	7	1	0	1	1	0	0	35
9,215	3,599	1,894	1,568	1,935	980	934	301	20,426
30,485	**3,044**	**1,669**	**1,154**	**1,268**	**2,012**	**2,064**	**1,077**	**42,774**
29,776	2,450	1,621	1,121	1,243	1,963	2,031	1,045	41,249
478	160	40	32	24	48	33	32	847
231	434	8	1	1	1	0	0	678
0	**158**	**17,028**	**8,748**	**448**	**0**	**0**	**0**	**26,383**
0	0	1,913	1,857	152	—	—	—	3,922
—	0	3,767	1,417	83	—	—	—	5,267
—	1	1,145	698	46	—	—	0	1,889
—	—	1,744	737	14	—	—	—	2,495
—	155	2,699	646	2	—	—	—	3,502
—	2	5,760	3,393	153	0	0	0	9,308
40,473	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40,473**
19,613	0	—	—	—	—	—	—	19,613
13,782	0	0	—	0	—	0	0	13,782
7,077	0	0	0	0	0	0	0	7,077

(Continues on the following page.)

Table 3C.1 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
E. Nutritional deficiencies	**29,552**	**9,242**	**1,486**	**1,102**	**779**	**726**	**285**	**186**	**66**	**13,872**
1. Protein-energy malnutrition	15,449	6,891	433	123	66	120	101	73	34	7,842
2. Iodine deficiency	2,873	1,074	352	0	1	2	1	0	0	1,430
3. Vitamin A deficiency	711	233	70	3	6	10	5	2	0	328
4. Iron-deficiency anemia	9,487	879	598	953	672	530	139	60	15	3,847
Other nutritional disorders	1,032	165	33	23	33	65	38	51	16	424
II. Noncommunicable diseases	***678,483***	***40,662***	***12,508***	***39,898***	***48,592***	***82,245***	***62,479***	***42,709***	***12,241***	***341,334***
A. Malignant neoplasms	**74,753**	**560**	**757**	**1,898**	**4,465**	**12,873**	**11,531**	**6,552**	**1,296**	**39,933**
1. Mouth and oropharynx cancers	4,078	5	12	115	382	1,050	866	347	69	2,846
2. Esophageal cancer	5,252	1	2	29	302	1,108	1,146	571	87	3,245
3. Stomach cancer	9,616	3	8	121	597	2,095	1,801	1,073	214	5,913
4. Colon and rectal cancers	5,060	1	4	109	358	773	758	488	114	2,605
5. Liver cancer	7,945	20	15	216	893	2,337	1,327	633	85	5,525
6. Pancreas cancer	1,621	0	2	5	99	340	267	150	29	892
7. Trachea, bronchus, and lung cancers	10,701	3	7	64	564	2,600	2,811	1,481	208	7,738
8. Melanoma and other skin cancers	501	1	2	14	38	83	62	38	11	249
9. Breast cancer	5,527	0	0	0	2	5	4	3	1	15
10. Cervix uteri cancer	3,799	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	908	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	1,488	—	—	—	—	—	—	—	—	—
13. Prostate cancer	1,479	1	1	3	12	173	503	601	185	1,479
14. Bladder cancer	1,504	2	2	8	46	237	343	282	77	997
15. Lymphomas and multiple myeloma	3,770	66	196	313	369	432	321	171	41	1,909
16. Leukemia	3,965	224	347	636	290	311	214	132	30	2,184
Other malignant neoplasms	7,538	235	162	261	514	1,330	1,106	582	145	4,335
B. Other neoplasms	**1,540**	**69**	**66**	**126**	**116**	**185**	**117**	**77**	**18**	**774**
C. Diabetes mellitus	**15,804**	**42**	**70**	**446**	**1,228**	**2,315**	**1,622**	**1,011**	**269**	**7,002**
D. Endocrine disorders	**10,943**	**3,663**	**216**	**305**	**297**	**411**	**193**	**138**	**55**	**5,278**
E. Neuropsychiatric conditions	**137,074**	**10,291**	**5,938**	**23,898**	**13,022**	**7,037**	**2,731**	**2,323**	**949**	**66,189**
1. Unipolar depressive disorders	43,427	0	2,452	5,692	4,992	3,076	906	180	33	17,331
2. Bipolar affective disorder	8,678	0	247	3,653	454	14	4	0	0	4,372
3. Schizophrenia	10,528	0	781	3,731	568	157	32	14	3	5,287
4. Epilepsy	5,759	501	636	861	591	294	105	48	12	3,049
5. Alcohol use disorders	11,007	2	101	4,029	3,427	1,621	289	62	8	9,540
6. Alzheimer's and other dementias	9,640	181	76	85	68	255	788	1,513	742	3,707
7. Parkinson's disease	1,239	5	3	10	66	150	139	156	49	578
8. Multiple sclerosis	916	1	43	165	126	40	11	4	1	391
9. Drug use disorders	4,405	1	68	1,765	1,170	455	27	4	1	3,491
10. Post-traumatic stress disorder	2,013	0	23	269	177	89	2	1	0	562
11. Obsessive-compulsive disorder	3,136	—	158	698	347	103	20	8	1	1,336
12. Panic disorder	4,015	—	70	1,209	16	56	7	4	0	1,362
13. Insomnia (primary)	2,219	—	29	278	297	188	95	32	6	925
14. Migraine	4,851	44	511	670	80	6	0	0	0	1,311
15. Mental retardation, lead-caused	8,599	4,319	17	22	7	4	1	0	0	4,370
Other neuropsychiatric disorders	16,644	5,236	724	762	637	527	303	296	92	8,577
F. Sense organ diseases	**72,275**	**30**	**165**	**1,621**	**8,069**	**12,018**	**7,042**	**3,113**	**604**	**32,662**
1. Glaucoma	4,112	7	30	128	346	649	381	191	45	1,776
2. Cataracts	28,150	17	100	606	2,450	4,569	2,674	1,259	281	11,955
3. Vision disorders, age-related	15,364	3	34	305	1,263	2,465	1,599	774	175	6,617
4. Hearing loss, adult onset	24,607	—	—	581	4,007	4,331	2,387	887	101	12,293
Other sense organ disorders	42	3	2	2	2	4	2	4	1	20
G. Cardiovascular diseases	**178,929**	**1,417**	**870**	**3,522**	**8,988**	**24,986**	**25,652**	**20,136**	**6,079**	**91,650**
1. Rheumatic heart disease	6,151	230	170	553	453	603	344	204	50	2,607
2. Hypertensive heart disease	9,969	27	21	110	434	1,294	1,408	1,141	405	4,840
3. Ischemic heart disease	71,882	103	217	1,033	3,782	12,275	11,574	8,509	2,270	39,761
4. Cerebrovascular disease	62,669	215	146	563	2,055	7,924	9,867	8,000	2,202	30,972
5. Inflammatory heart diseases	5,811	260	80	389	615	756	549	420	153	3,222
Other cardiovascular diseases	22,446	582	237	875	1,648	2,134	1,910	1,862	998	10,248

Table 3C.1 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
9,314	**1,980**	**1,292**	**1,097**	**1,143**	**474**	**271**	**108**	**15,680**
6,674	489	54	68	97	105	75	45	7,607
1,100	338	1	1	2	1	1	0	1,443
288	69	9	4	8	3	2	0	382
945	1,039	1,210	1,006	989	316	106	30	5,640
308	45	19	19	46	49	88	33	607
38,101	***13,010***	***38,561***	***44,802***	***70,363***	***58,972***	***51,956***	***21,385***	***337,149***
587	**669**	**1,602**	**5,079**	**11,048**	**8,382**	**5,836**	**1,618**	**34,820**
9	5	32	123	415	346	224	78	1,232
1	2	21	127	665	632	442	118	2,007
1	4	97	512	1,061	930	832	266	3,704
1	3	47	328	685	672	537	182	2,456
32	19	145	363	740	602	426	91	2,420
0	1	9	70	212	211	176	50	729
6	29	29	280	935	883	682	120	2,963
1	3	12	38	69	59	52	17	251
1	2	62	1,169	2,297	1,180	624	178	5,512
0	2	341	517	1,448	923	470	99	3,799
2	2	18	162	318	226	143	36	908
2	18	90	258	523	348	203	46	1,488
—	—	—	—	—	—	—	—	—
21	7	13	78	109	124	112	44	507
88	171	216	293	398	360	258	77	1,861
238	272	333	303	298	178	121	37	1,781
184	129	136	457	876	708	534	179	3,203
50	**51**	**70**	**132**	**227**	**121**	**88**	**28**	**766**
60	**78**	**400**	**1,231**	**2,623**	**2,313**	**1,660**	**438**	**8,802**
3,354	**213**	**433**	**454**	**526**	**333**	**241**	**111**	**5,665**
9,880	**6,118**	**23,919**	**13,362**	**8,016**	**3,919**	**3,487**	**2,185**	**70,885**
0	2,313	7,821	8,164	5,445	1,815	432	105	26,096
0	212	3,609	462	17	5	1	0	4,306
1	191	3,922	800	241	49	29	6	5,241
415	642	793	437	257	92	57	16	2,710
0	41	661	460	244	44	15	2	1,467
163	72	89	74	281	1,150	2,282	1,821	5,933
6	4	7	56	159	165	189	74	661
1	56	213	174	57	15	6	2	525
—	42	453	295	114	7	2	1	913
0	16	724	491	200	11	6	2	1,450
—	304	769	504	168	37	15	3	1,800
—	71	2,416	25	114	15	11	1	2,653
—	28	304	412	300	168	65	16	1,293
132	1,567	1,421	416	4	0	0	0	3,540
4,182	19	16	8	4	1	1	0	4,229
4,980	539	700	585	411	342	376	135	8,067
30	**114**	**1,268**	**8,483**	**14,213**	**9,493**	**4,835**	**1,176**	**39,613**
4	26	141	401	812	547	309	95	2,336
14	62	560	2,826	6,114	4,023	2,055	542	16,195
9	24	225	1,417	3,092	2,238	1,358	384	8,746
—	—	338	3,838	4,192	2,684	1,109	153	12,314
3	2	3	2	3	2	4	2	22
1,614	**931**	**3,134**	**5,748**	**16,720**	**22,339**	**25,431**	**11,362**	**87,279**
246	247	589	587	809	556	398	113	3,544
23	25	79	308	1,100	1,371	1,502	720	5,129
74	166	1,003	1,893	6,198	9,196	9,592	3,998	32,121
156	139	349	1,480	6,136	8,728	10,344	4,366	31,697
203	84	256	322	488	453	520	262	2,589
912	269	857	1,157	1,989	2,035	3,076	1,903	12,199

(Continues on the following page.)

Table 3C.1 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
H. Respiratory diseases	**58,086**	**3,254**	**1,699**	**2,368**	**2,918**	**7,262**	**6,468**	**5,466**	**1,889**	**31,324**
1. Chronic obstructive pulmonary disease	33,453	48	15	120	1,307	5,359	5,162	4,466	1,499	17,977
2. Asthma	11,514	1,013	1,348	1,783	829	714	285	156	36	6,165
Other respiratory diseases	13,119	2,193	336	464	781	1,188	1,021	845	354	7,182
I. Digestive diseases	**52,402**	**7,366**	**859**	**2,588**	**4,573**	**7,021**	**3,436**	**1,998**	**571**	**28,411**
1. Peptic ulcer disease	4,801	91	67	394	667	967	454	269	74	2,983
2. Cirrhosis of the liver	13,633	256	152	621	1,835	3,171	1,447	674	121	8,278
3. Appendicitis	377	7	28	36	38	55	24	19	6	213
Other digestive diseases	33,591	7,012	612	1,536	2,033	2,829	1,510	1,036	370	16,938
J. Genitourinary diseases	**16,381**	**975**	**345**	**725**	**1,000**	**3,616**	**1,389**	**983**	**320**	**9,352**
1. Nephritis and nephrosis	9,076	327	283	583	777	1,104	837	578	180	4,669
2. Benign prostatic hypertrophy	2,613	—	—	0	12	2,118	255	173	55	2,613
Other genitourinary system diseases	4,691	648	62	142	211	395	296	233	84	2,070
K. Skin diseases	**3,696**	**498**	**225**	**302**	**287**	**256**	**130**	**95**	**36**	**1,828**
L. Musculoskeletal diseases	**25,693**	**202**	**432**	**1,293**	**3,307**	**3,561**	**1,589**	**689**	**137**	**11,210**
1. Rheumatoid arthritis	3,645	11	75	171	246	308	150	71	14	1,046
2. Osteoarthritis	13,666	0	3	367	1,348	1,970	1,060	403	52	5,203
3. Gout	2,785	0	0	123	1,307	854	147	39	6	2,476
4. Low back pain	1,692	69	167	184	212	184	55	23	4	899
Other musculoskeletal disorders	3,905	122	187	448	195	245	178	153	60	1,587
M. Congenital anomalies	**23,533**	**11,352**	**302**	**339**	**67**	**35**	**12**	**6**	**1**	**12,115**
1. Abdominal wall defect	110	59	0	0	0	0	0	0	0	60
2. Anencephaly	545	258	0	0	0	0	0	0	0	259
3. Anorectal atresia	31	20	0	0	0	0	0	0	0	20
4. Cleft lip	117	61	0	0	0	0	0	0	0	61
5. Cleft palate	131	67	0	0	0	0	0	0	0	67
6. Esophageal atresia	46	23	0	0	0	0	0	0	0	23
7. Renal agenesis	53	30	0	1	0	0	0	0	0	31
8. Down syndrome	3,416	1,736	28	57	3	3	0	0	0	1,827
9. Congenital heart anomalies	13,191	6,198	164	202	42	15	5	3	1	6,629
10. Spina bifida	1,488	706	10	4	0	1	0	0	0	721
Other congenital anomalies	4,405	2,196	98	74	21	17	6	3	1	2,417
N. Oral conditions	**7,375**	**942**	**564**	**467**	**256**	**670**	**569**	**121**	**18**	**3,607**
1. Dental caries	4,752	919	558	341	144	250	123	60	15	2,409
2. Periodontal disease	207	—	—	26	47	20	7	4	1	103
3. Edentulism	2,293	—	—	95	59	397	438	57	2	1,047
Other oral diseases	123	24	5	6	6	3	1	1	0	47
III. Injuries	**155,850**	**7,959**	**13,630**	**35,429**	**25,209**	**13,279**	**4,036**	**1,747**	**437**	**101,727**
A. Unintentional injuries	**113,235**	**7,608**	**12,447**	**21,335**	**15,467**	**9,335**	**2,931**	**1,311**	**338**	**70,773**
1. Road traffic accidents	32,017	1,186	3,267	7,571	5,925	3,203	860	362	67	22,441
2. Poisonings	7,115	286	320	962	1,267	1,273	368	91	16	4,583
3. Falls	13,582	983	1,670	2,159	1,384	1,002	468	360	130	8,157
4. Fires	10,080	923	865	884	738	375	112	55	14	3,967
5. Drownings	9,391	1,010	1,680	1,835	1,057	583	151	62	17	6,395
6. Other unintentional injuries	41,050	3,219	4,644	7,923	5,096	2,899	972	381	95	25,229
B. Intentional injuries	**42,615**	**351**	**1,183**	**14,094**	**9,742**	**3,944**	**1,105**	**436**	**99**	**30,954**
1. Self-inflicted injuries	17,674	3	338	3,938	3,054	1,849	646	294	58	10,181
2. Violence	18,132	240	760	7,424	4,360	1,506	291	102	28	14,711
3. War	6,492	91	71	2,628	2,254	563	157	35	12	5,809
Other intentional injuries	317	17	15	104	74	26	11	5	2	253

Table 3C.1 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
2,709	**1,790**	**1,938**	**2,405**	**4,997**	**4,615**	**5,539**	**2,770**	**26,762**
63	21	129	1,269	3,543	3,578	4,618	2,255	15,476
740	1,521	1,349	604	658	264	159	54	5,349
1,907	247	459	533	795	772	762	461	5,937
7,072	**1,164**	**2,371**	**2,749**	**4,630**	**2,867**	**2,261**	**878**	**23,990**
98	56	194	332	500	299	244	96	1,819
597	299	501	804	1,523	914	581	136	5,355
6	21	28	20	35	24	22	8	164
6,371	788	1,648	1,592	2,573	1,629	1,413	638	16,653
626	**333**	**720**	**1,015**	**1,685**	**1,280**	**999**	**371**	**7,028**
266	275	436	564	1,095	883	663	224	4,407
—	—	—	—	—	—	—	—	—
360	58	284	452	589	396	336	147	2,621
348	**158**	**284**	**295**	**311**	**200**	**180**	**93**	**1,868**
187	**544**	**1,685**	**3,504**	**4,619**	**2,437**	**1,186**	**322**	**14,483**
21	183	476	616	759	338	165	41	2,599
0	4	632	2,133	3,133	1,719	724	120	8,463
0	0	21	146	84	34	20	4	309
35	201	125	199	155	51	22	5	794
131	156	430	410	488	295	256	151	2,318
10,700	**306**	**269**	**78**	**41**	**13**	**9**	**2**	**11,418**
50	0	0	0	0	0	0	0	50
284	1	1	0	0	0	0	0	286
11	0	0	0	0	0	0	0	11
56	0	0	0	0	0	0	0	56
63	0	0	0	0	0	0	0	64
22	0	0	0	0	0	0	0	23
20	0	0	0	0	0	0	0	22
1,497	30	53	3	4	0	0	0	1,588
6,115	187	174	53	21	6	5	1	6,562
755	8	3	1	1	0	0	0	768
1,826	79	37	21	15	6	3	1	1,988
883	**541**	**470**	**266**	**709**	**662**	**205**	**32**	**3,768**
860	534	327	141	251	135	73	22	2,343
—	0	25	45	20	8	4	1	103
—	—	97	63	434	517	126	8	1,246
23	7	20	17	4	2	1	0	76
7,212	**10,342**	**14,990**	**10,149**	**6,602**	**2,583**	**1,680**	**564**	**54,123**
7,006	**9,322**	**10,464**	**7,096**	**4,763**	**1,995**	**1,334**	**481**	**42,462**
1,088	2,342	2,178	1,880	1,374	426	237	52	9,576
205	293	472	537	549	345	105	26	2,532
953	1,422	997	569	503	330	446	205	5,424
1,079	1,075	2,066	1,139	472	144	105	33	6,113
762	922	585	328	215	99	64	22	2,995
2,919	3,269	4,167	2,643	1,651	652	378	143	15,821
206	**1,019**	**4,526**	**3,053**	**1,839**	**587**	**347**	**83**	**11,661**
1	409	3,181	1,974	1,213	394	257	64	7,493
187	412	1,205	920	464	146	73	14	3,421
6	190	126	148	151	43	14	5	683
12	7	15	11	12	4	2	1	64

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. For East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean regions, these figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994, 2000, and 2002, respectively.

b. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.2 DALYs(3,0) by Cause, Sex, and Age in the East Asia and Pacific Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*1,849*	*80*	*175*	*244*	*224*	*136*	*51*	*25*	*6*	*942*
All causes	**346,225**	**32,713**	**8,127**	**24,304**	**27,851**	**37,655**	**26,822**	**18,363**	**5,448**	**181,284**
I. Communicable, maternal, perinatal, and nutritional conditions	***76,710***	***20,685***	***2,069***	***3,489***	***4,693***	***3,712***	***2,155***	***1,345***	***456***	***38,605***
A. Infectious and parasitic diseases	**36,941**	**7,035**	**1,394**	**2,822**	**4,207**	**3,032**	**1,626**	**909**	**214**	**21,238**
1. **Tuberculosis**	**10,878**	**74**	**110**	**997**	**1,812**	**1,817**	**1,256**	**660**	**117**	**6,842**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**848**	**78**	**2**	**86**	**46**	**19**	**11**	**7**	**3**	**252**
a. Syphilis	129	37	0	9	7	9	10	7	2	82
b. Chlamydia	409	4	1	27	6	0	0	—	—	38
c. Gonorrhea	263	36	1	49	31	1	0	—	—	118
d. Other sexually transmitted diseases	48	0	—	1	2	9	0	—	1	14
3. **HIV/AIDS**	**3,087**	**94**	**12**	**657**	**1,204**	**337**	**21**	**2**	**0**	**2,328**
4. **Diarrheal diseases**	**8,782**	**3,661**	**174**	**224**	**228**	**156**	**73**	**44**	**19**	**4,579**
5. **Childhood-cluster diseases**	**3,707**	**1,201**	**447**	**138**	**40**	**16**	**5**	**2**	**1**	**1,849**
a. Pertussis	579	276	12	—	—	—	—	—	—	288
b. Poliomyelitis[a]	49	1	3	10	8	2	—	—	—	24
c. Diphtheria	18	12	1	0	1	0	0	—	0	13
d. Measles	2,303	680	370	90	—	—	—	—	—	1,140
e. Tetanus	758	233	61	37	30	13	5	2	1	383
6. **Meningitis**	**1,067**	**295**	**47**	**78**	**49**	**34**	**12**	**10**	**3**	**528**
7. **Hepatitis B[b]**	**673**	**17**	**2**	**70**	**179**	**218**	**52**	**10**	**3**	**551**
Hepatitis C[b]	**275**	**4**	**0**	**29**	**76**	**91**	**21**	**4**	**1**	**228**
8. **Malaria**	**1,090**	**596**	**43**	**27**	**22**	**14**	**6**	**3**	**1**	**711**
9. **Tropical-cluster diseases**	**483**	**8**	**51**	**118**	**76**	**63**	**17**	**3**	**1**	**336**
a. Trypanosomiasis	—	—	—	—	—	—	—	—	—	—
b. Chagas' disease	0	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	64	0	2	5	7	22	13	1	0	51
d. Leishmaniasis	48	2	8	10	5	2	1	0	0	28
e. Lymphatic filariasis	371	6	41	103	63	39	4	1	0	257
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**34**	**0**	**1**	**2**	**4**	**6**	**8**	**4**	**0**	**25**
11. **Dengue**	**217**	**28**	**48**	**7**	**3**	**2**	**1**	**1**	**0**	**90**
12. **Japanese encephalitis**	**301**	**74**	**48**	**17**	**12**	**3**	**1**	**1**	**0**	**155**
13. **Trachoma**	**500**	**0**	**0**	**1**	**22**	**38**	**29**	**20**	**5**	**115**
14. **Intestinal nematode infections**	**680**	**79**	**263**	**1**	**1**	**1**	**1**	**0**	**0**	**347**
a. Ascariasis	301	34	117	—	—	0	—	0	—	151
b. Trichuriasis	197	24	79	—	—	—	—	—	—	103
c. Hookworm disease	168	16	65	1	1	1	1	0	0	86
Other intestinal infections	14	5	2	0	0	0	0	0	0	7
Other infectious diseases	4,318	825	146	371	433	217	114	138	60	2,302
B. Respiratory infections	**11,800**	**2,414**	**434**	**310**	**300**	**492**	**459**	**402**	**230**	**5,044**
1. Lower respiratory infections	10,786	2,171	282	274	262	442	435	394	222	4,482
2. Upper respiratory infections	598	177	8	31	36	49	23	8	8	341
3. Otitis media	416	67	143	5	3	1	1	0	0	221
C. Maternal conditions	**3,475**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	322	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	881	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	128	—	—	—	—	—	—	—	—	—
4. Obstructed labor	239	—	—	—	—	—	—	—	—	—
5. Abortion	191	—	—	—	—	—	—	—	—	—
Other maternal conditions	1,714	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**18,696**	**9,697**	**0**	**—**	**—**	**—**	**—**	**—**	**—**	**9,697**
1. Low birthweight	6,226	3,233	—	—	—	—	—	—	—	3,233
2. Birth asphyxia and birth trauma	7,737	4,044	—	—	—	—	—	—	—	4,044
Other perinatal conditions	4,734	2,420	0	—	—	—	—	—	—	2,420

Table 3C.2 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
74	*161*	*232*	*217*	*131*	*52*	*30*	*10*	*907*
32,207	**7,531**	**20,001**	**22,375**	**29,536**	**22,927**	**20,849**	**9,516**	**164,941**
20,993	***2,310***	***5,035***	***3,961***	***2,359***	***1,490***	***1,253***	***703***	***38,104***
6,177	**1,331**	**2,122**	**2,392**	**1,773**	**1,000**	**692**	**215**	**15,702**
68	**116**	**749**	**1,104**	**963**	**602**	**357**	**77**	**4,036**
58	**9**	**360**	**115**	**34**	**12**	**6**	**1**	**596**
19	0	11	7	0	4	3	1	46
4	7	278	59	20	3	—	—	371
35	2	69	39	0	0	—	—	145
0	—	2	9	13	6	3	1	34
73	**11**	**210**	**259**	**171**	**29**	**6**	**0**	**759**
3,356	**159**	**199**	**198**	**138**	**73**	**52**	**28**	**4,203**
1,201	**450**	**143**	**40**	**17**	**5**	**2**	**1**	**1,859**
280	12	—	—	—	—	—	—	292
1	3	10	8	2	—	—	—	24
4	1	0	0	0	—	—	—	5
698	372	94	—	—	—	—	—	1,163
219	62	39	32	14	5	2	1	375
263	**37**	**83**	**80**	**46**	**17**	**9**	**2**	**539**
16	**2**	**22**	**39**	**25**	**11**	**4**	**3**	**122**
6	**0**	**9**	**17**	**9**	**4**	**2**	**1**	**48**
287	**36**	**20**	**17**	**11**	**5**	**3**	**1**	**379**
6	**16**	**48**	**32**	**37**	**4**	**1**	**2**	**146**
—	—	—	—	—	—	—	—	—
—	—	—	0	—	—	—	—	0
0	1	2	3	3	2	0	2	12
2	5	7	4	1	0	0	0	20
4	11	39	25	32	2	1	0	114
—	—	—	—	—	—	—	—	—
0	**1**	**1**	**3**	**2**	**1**	**0**	**0**	**8**
40	**60**	**14**	**6**	**4**	**2**	**1**	**1**	**127**
67	**47**	**14**	**13**	**3**	**1**	**0**	**0**	**146**
0	**0**	**4**	**76**	**116**	**94**	**70**	**24**	**385**
76	**252**	**2**	**1**	**1**	**1**	**0**	**0**	**333**
37	112	0	0	—	0	—	—	149
18	76	—	—	—	—	—	—	94
15	62	2	1	1	1	0	0	82
6	1	0	0	—	0	0	0	8
659	136	245	392	197	137	177	73	2,016
4,412	**450**	**172**	**159**	**235**	**373**	**498**	**458**	**6,756**
4,176	305	157	147	227	365	492	434	6,304
175	12	14	12	7	8	6	24	258
62	133	0	0	0	0	—	0	195
—	**6**	**2,342**	**1,116**	**12**	**—**	**—**	**—**	**3,475**
—	—	155	165	2	—	—	—	322
—	—	721	159	1	—	—	—	881
—	0	66	61	1	—	—	—	128
—	—	177	62	0	—	—	—	239
—	6	123	61	2	—	—	—	191
—	—	1,100	608	6	—	—	—	1,714
8,999	**0**	**—**	**—**	**—**	**—**	**—**	**—**	**8,999**
2,993	0	—	—	—	—	—	—	2,993
3,693	—	—	—	—	—	—	—	3,693
2,313	—	—	—	—	—	—	—	2,313

(Continues on the following page.)

Table 3C.2 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
E. Nutritional deficiencies	**5,797**	**1,539**	**241**	**357**	**186**	**188**	**69**	**34**	**12**	**2,626**
1. Protein-energy malnutrition	2,725	1,303	27	29	22	24	13	8	5	1,431
2. Iodine deficiency	251	92	32	0	0	0	0	0	0	125
3. Vitamin A deficiency	10	2	3	—	1	0	—	—	—	7
4. Iron-deficiency anemia	2,695	124	176	325	160	157	50	17	3	1,013
Other nutritional disorders	116	18	2	3	3	7	6	9	3	51
II. Noncommunicable diseases	***228,073***	***10,262***	***3,138***	***12,214***	***16,524***	***30,234***	***23,387***	***16,449***	***4,848***	***117,055***
A. Malignant neoplasms	**32,341**	**181**	**247**	**718**	**2,158**	**6,608**	**5,244**	**2,915**	**482**	**18,553**
1. Mouth and oropharynx cancers	1,064	0	1	33	133	313	170	72	12	736
2. Esophageal cancer	3,217	0	0	16	189	678	703	377	50	2,013
3. Stomach cancer	6,134	1	2	74	375	1,437	1,155	686	131	3,861
4. Colon and rectal cancers	2,330	0	0	49	173	394	339	201	46	1,202
5. Liver cancer	5,923	7	6	145	689	1,905	1,009	472	57	4,290
6. Pancreas cancer	544	0	1	2	39	137	82	47	8	317
7. Trachea, bronchus, and lung cancers	5,333	2	3	25	276	1,124	1,281	709	98	3,518
8. Melanoma and other skin cancers	66	0	0	1	3	12	10	5	1	32
9. Breast cancer	1,730	—	—	—	0	0	0	0	0	1
10. Cervix uteri cancer	805	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	175	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	464	—	—	—	—	—	—	—	—	—
13. Prostate cancer	164	0	0	0	1	18	55	73	17	164
14. Bladder cancer	348	0	0	1	6	50	84	85	21	248
15. Lymphomas and multiple myeloma	753	15	44	69	92	121	70	32	7	451
16. Leukemia	1,652	98	156	269	109	136	77	45	9	900
Other malignant neoplasms	1,640	57	33	34	72	282	207	111	25	820
B. Other neoplasms	**354**	**15**	**16**	**17**	**18**	**53**	**24**	**16**	**3**	**163**
C. Diabetes mellitus	**4,918**	**5**	**14**	**116**	**391**	**702**	**514**	**313**	**72**	**2,126**
D. Endocrine disorders	**2,560**	**585**	**57**	**71**	**75**	**93**	**42**	**33**	**18**	**975**
E. Neuropsychiatric conditions	**42,926**	**2,395**	**1,636**	**7,643**	**4,601**	**2,490**	**1,083**	**847**	**354**	**21,050**
1. Unipolar depressive disorders	14,037	0	746	1,902	1,720	1,221	351	68	11	6,019
2. Bipolar affective disorder	3,115	0	64	1,271	201	6	2	0	0	1,544
3. Schizophrenia	3,930	0	362	1,331	284	60	11	3	1	2,051
4. Epilepsy	1,303	80	126	199	178	71	25	11	3	693
5. Alcohol use disorders	4,303	0	33	1,475	1,510	657	100	18	3	3,796
6. Alzheimer's and other dementias	4,110	65	28	35	39	123	437	598	287	1,613
7. Parkinson's disease	435	1	0	3	21	48	46	61	23	202
8. Multiple sclerosis	317	0	14	58	46	11	2	1	0	131
9. Drug use disorders	425	0	17	172	109	40	2	0	0	340
10. Post-traumatic stress disorder	748	0	8	84	75	38	1	1	0	207
11. Obsessive-compulsive disorder	667	—	10	134	94	29	3	1	0	270
12. Panic disorder	1,400	—	26	411	6	25	3	2	0	472
13. Insomnia (primary)	596	—	12	46	51	39	18	11	2	179
14. Migraine	1,691	7	89	295	28	2	0	0	0	421
15. Mental retardation, lead-caused	2,598	1,335	1	0	0	0	0	0	0	1,336
Other neuropsychiatric disorders	3,255	907	100	227	241	120	82	73	24	1,775
F. Sense organ diseases	**27,758**	**1**	**26**	**453**	**2,895**	**5,007**	**3,116**	**1,244**	**223**	**12,964**
1. Glaucoma	1,703	0	2	13	97	336	200	85	19	753
2. Cataracts	9,727	0	1	42	609	1,766	1,214	519	95	4,246
3. Vision disorders, age-related	7,608	0	23	166	617	1,323	828	345	80	3,383
4. Hearing loss, adult onset	8,712	—	—	231	1,571	1,580	873	294	29	4,578
Other sense organ disorders	8	0	0	1	1	1	0	0	0	4
G. Cardiovascular diseases	**52,872**	**249**	**182**	**951**	**2,381**	**6,987**	**7,874**	**6,652**	**2,090**	**27,365**
1. Rheumatic heart disease	2,244	24	32	160	159	228	150	90	21	864
2. Hypertensive heart disease	4,234	6	3	30	170	558	676	545	191	2,180
3. Ischemic heart disease	14,242	26	65	328	807	2,071	2,097	1,725	541	7,661
4. Cerebrovascular disease	25,832	49	20	157	830	3,509	4,377	3,714	1,037	13,692
5. Inflammatory heart diseases	1,147	25	11	52	71	121	123	118	56	577
Other cardiovascular diseases	5,173	119	50	224	345	500	449	461	244	2,392

Table 3C.2 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
1,405	**523**	**399**	**294**	**340**	**117**	**63**	**30**	**3,171**
1,183	22	6	17	20	20	15	11	1,294
94	33	0	0	0	0	0	0	127
2	2	—	—	—	—	—	—	3
116	465	391	275	311	86	29	8	1,682
10	2	1	3	9	11	19	11	65
9,423	***2,874***	***11,115***	***14,652***	***24,822***	***20,560***	***18,988***	***8,584***	***111,018***
196	**207**	**453**	**2,065**	**4,548**	**3,266**	**2,415**	**637**	**13,788**
1	1	6	38	126	79	59	17	329
0	0	5	53	407	384	288	67	1,204
0	0	53	329	670	543	509	169	2,273
0	0	19	172	345	303	211	77	1,128
19	7	69	254	517	424	285	58	1,633
0	1	3	31	70	59	49	14	227
4	24	10	156	559	541	446	74	1,814
0	0	1	5	10	8	7	2	34
0	0	16	423	805	304	143	39	1,730
0	0	65	93	308	196	120	22	805
0	0	2	39	72	38	19	5	175
1	5	28	104	175	91	50	11	464
—	—	—	—	—	—	—	—	—
0	0	1	7	17	29	34	12	100
7	15	31	65	80	49	42	12	303
101	123	123	155	136	62	39	13	753
62	30	21	142	250	158	114	44	819
17	**6**	**13**	**29**	**67**	**30**	**22**	**7**	**191**
7	**15**	**106**	**399**	**830**	**734**	**559**	**142**	**2,792**
884	**52**	**162**	**207**	**112**	**75**	**56**	**36**	**1,585**
2,053	**1,405**	**7,489**	**4,191**	**3,047**	**1,465**	**1,301**	**925**	**21,877**
—	688	1,767	2,472	2,214	671	163	43	8,017
0	83	1,277	201	8	2	0	0	1,571
0	88	1,389	275	98	17	10	2	1,879
55	113	187	145	66	25	14	4	609
—	17	217	190	75	7	2	0	507
54	26	38	42	131	522	900	783	2,496
0	—	3	10	42	55	81	42	233
0	24	75	67	16	3	1	0	186
—	9	38	27	10	0	0	0	85
—	5	241	212	75	4	2	1	540
—	4	200	144	42	4	1	0	396
—	20	840	10	47	6	4	1	927
—	10	81	142	97	59	22	6	417
19	258	945	47	1	0	0	0	1,270
1,261	0	0	0	0	0	0	0	1,261
663	60	192	206	126	90	100	43	1,480
1	**4**	**273**	**2,661**	**5,620**	**3,964**	**1,841**	**431**	**14,794**
—	2	13	99	404	269	125	37	949
0	1	18	529	2,175	1,756	817	185	5,481
0	0	98	784	1,645	1,030	514	154	4,225
—	—	143	1,248	1,395	908	384	55	4,134
1	1	1	0	1	0	0	0	4
206	**165**	**706**	**1,647**	**5,019**	**6,227**	**7,757**	**3,780**	**25,507**
24	38	166	232	355	285	212	67	1,380
4	3	18	104	416	546	638	324	2,054
14	44	245	452	1,246	1,756	1,890	935	6,582
37	24	82	532	2,430	3,057	4,121	1,858	12,140
19	9	32	44	93	102	158	112	570
108	47	163	282	479	481	738	484	2,781

(Continues on the following page.)

Table 3C.2 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
H. Respiratory diseases	**23,551**	**660**	**391**	**613**	**729**	**2,813**	**2,854**	**3,065**	**1,227**	**12,353**
1. Chronic obstructive pulmonary disease	17,181	7	2	13	308	2,346	2,476	2,724	1,049	8,924
2. Asthma	3,203	254	335	513	267	209	77	46	9	1,709
Other respiratory diseases	3,167	399	54	88	154	258	302	296	169	1,720
I. Digestive diseases	**15,419**	**2,427**	**129**	**667**	**1,378**	**2,162**	**1,091**	**687**	**210**	**8,750**
1. Peptic ulcer disease	1,800	32	11	104	229	365	202	119	34	1,096
2. Cirrhosis of the liver	3,882	39	17	163	579	994	437	217	41	2,487
3. Appendicitis	122	2	6	12	14	23	7	5	2	70
Other digestive diseases	9,615	2,354	96	388	556	780	445	346	133	5,097
J. Genitourinary diseases	**5,388**	**185**	**90**	**271**	**347**	**1,328**	**509**	**326**	**99**	**3,154**
1. Nephritis and nephrosis	3,041	52	69	230	287	384	294	186	53	1,555
2. Benign prostatic hypertrophy	997	—	—	—	5	820	91	62	20	997
Other genitourinary system diseases	1,350	132	21	41	55	124	125	78	26	602
K. Skin diseases	**960**	**92**	**58**	**86**	**71**	**70**	**34**	**23**	**8**	**442**
L. Musculoskeletal diseases	**10,389**	**45**	**119**	**382**	**1,372**	**1,666**	**774**	**287**	**57**	**4,702**
1. Rheumatoid arthritis	1,225	1	11	29	86	141	70	31	6	375
2. Osteoarthritis	5,724	0	1	105	475	909	514	146	15	2,166
3. Gout	1,414	0	0	52	667	444	76	20	3	1,262
4. Low back pain	633	20	54	64	82	79	24	10	2	335
Other musculoskeletal disorders	1,394	24	52	131	63	93	90	80	32	565
M. Congenital anomalies	**6,208**	**2,992**	**103**	**128**	**28**	**13**	**4**	**2**	**1**	**3,272**
1. Abdominal wall defect	6	4	—	—	0	—	—	—	0	4
2. Anencephaly	49	28	0	—	—	—	—	—	0	29
3. Anorectal atresia	1	1	—	—	—	—	—	—	—	1
4. Cleft lip	56	29	—	—	—	—	—	—	—	29
5. Cleft palate	35	22	0	0	0	—	—	—	—	22
6. Esophageal atresia	1	0	—	—	—	—	—	—	—	0
7. Renal agenesis	2	1	—	—	0	—	—	—	—	1
8. Down syndrome	447	244	3	5	0	—	—	—	—	252
9. Congenital heart anomalies	3,848	1,781	65	84	21	7	2	1	0	1,960
10. Spina bifida	208	102	0	—	—	0	0	—	—	102
Other congenital anomalies	1,555	779	36	39	7	7	2	1	0	872
N. Oral conditions	**2,429**	**430**	**69**	**97**	**80**	**243**	**223**	**40**	**4**	**1,187**
1. Dental caries	1,400	424	66	54	43	83	31	15	4	720
2. Periodontal disease	48	—	—	6	12	4	1	1	0	24
3. Edentulism	935	—	—	36	22	155	190	24	1	428
Other oral diseases	45	7	3	2	2	1	0	0	0	15
III. Injuries	**41,442**	**1,765**	**2,921**	**8,601**	**6,634**	**3,709**	**1,281**	**569**	**144**	**25,624**
A. Unintentional injuries	**30,638**	**1,718**	**2,701**	**6,138**	**4,545**	**2,666**	**866**	**394**	**108**	**19,136**
1. Road traffic accidents	10,243	207	543	2,812	2,065	1,129	322	122	20	7,221
2. Poisonings	1,793	76	78	235	276	256	105	40	7	1,072
3. Falls	4,675	245	420	832	574	413	172	117	47	2,821
4. Fires	1,135	69	52	111	99	43	22	16	4	416
5. Drownings	3,740	521	817	614	224	138	51	26	9	2,399
6. Other unintentional injuries	9,052	599	792	1,535	1,307	688	193	71	21	5,207
B. Intentional injuries	**10,804**	**47**	**219**	**2,462**	**2,089**	**1,043**	**415**	**175**	**36**	**6,487**
1. Self-inflicted injuries	7,074	—	98	1,135	992	673	338	154	31	3,421
2. Violence	3,118	39	113	1,105	882	315	63	18	4	2,539
3. War	532	7	6	195	190	47	12	3	1	461
Other intentional injuries	79	1	2	28	24	7	2	1	0	65

Table 3C.2 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
534	**425**	**439**	**671**	**1,355**	**2,300**	**3,452**	**2,022**	**11,199**
5	0	15	364	967	1,978	3,156	1,772	8,257
204	388	349	200	202	95	41	13	1,494
325	36	75	106	187	227	255	237	1,448
2,268	**139**	**407**	**716**	**1,243**	**805**	**751**	**340**	**6,669**
36	11	54	111	201	137	106	48	704
56	27	82	249	442	278	204	56	1,395
2	4	6	9	12	7	8	3	52
2,173	96	265	348	588	383	432	233	4,518
78	**83**	**214**	**388**	**570**	**441**	**341**	**117**	**2,234**
46	71	149	248	372	305	219	76	1,486
—	—	—	—	—	—	—	—	—
32	13	65	140	199	135	122	41	748
78	**54**	**98**	**102**	**88**	**46**	**35**	**18**	**518**
51	**135**	**559**	**1,445**	**2,053**	**949**	**378**	**117**	**5,687**
2	26	72	175	338	157	63	17	850
0	1	303	962	1,435	638	191	28	3,558
0	0	8	76	41	16	9	2	152
10	64	44	84	65	20	9	2	298
38	44	133	148	173	118	106	68	829
2,660	**120**	**89**	**43**	**15**	**4**	**3**	**1**	**2,936**
2	—	—	—	—	—	0	—	2
20	0	0	0	0	—	—	—	20
0	—	—	—	—	—	—	—	0
27	—	—	—	—	—	—	—	27
13	0	0	0	0	—	—	—	13
0	—	—	—	—	—	—	—	0
1	—	—	—	—	—	—	—	1
186	3	6	0	0	—	—	—	195
1,671	94	73	35	10	3	2	1	1,888
106	0	0	0	0	—	0	0	106
633	23	10	8	5	2	1	0	683
390	**64**	**105**	**88**	**254**	**254**	**76**	**10**	**1,242**
385	62	52	43	83	33	18	6	681
—	0	6	12	4	1	1	0	24
—	—	37	24	166	218	57	4	506
6	2	10	10	2	0	0	0	30
1,792	**2,347**	**3,851**	**3,761**	**2,354**	**877**	**608**	**229**	**15,819**
1,773	**2,108**	**2,586**	**2,366**	**1,503**	**567**	**415**	**184**	**11,502**
189	396	728	865	584	158	83	18	3,022
82	94	128	176	136	61	35	9	722
266	372	377	250	205	127	161	96	1,854
88	125	250	149	62	19	17	8	718
345	482	178	159	91	40	31	13	1,341
802	639	925	766	424	161	88	40	3,845
19	**239**	**1,265**	**1,395**	**851**	**310**	**193**	**45**	**4,317**
—	153	1,064	1,188	743	281	180	43	3,653
18	59	185	190	89	25	12	1	579
0	25	11	12	17	3	1	0	71
1	1	4	4	3	1	0	0	14

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994.

b. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.3 DALYs(3,0) by Cause, Sex, and Age in the Europe and Central Asia Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*477*	*15*	*38*	*59*	*51*	*37*	*17*	*9*	*2*	*230*
All causes	**116,502**	**5,211**	**1,902**	**8,184**	**11,371**	**15,315**	**11,968**	**8,004**	**1,950**	**63,904**
I. Communicable, maternal, perinatal, and nutritional conditions	***10,908***	***2,829***	***284***	***631***	***1,135***	***905***	***329***	***128***	***32***	***6,274***
A. Infectious and parasitic diseases	**4,760**	**676**	**102**	**554**	**1,021**	**624**	**153**	**45**	**8**	**3,183**
1. **Tuberculosis**	**1,536**	**4**	**4**	**174**	**498**	**431**	**110**	**27**	**3**	**1,251**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**200**	**8**	**0**	**20**	**13**	**1**	**0**	**0**	**0**	**43**
a. Syphilis	12	4	0	1	1	0	0	0	0	6
b. Chlamydia	122	1	0	6	3	0	0	—	—	10
c. Gonorrhea	59	1	0	13	10	0	0	0	—	24
d. Other sexually transmitted diseases	8	2	—	0	0	0	0	0	—	3
3. **HIV/AIDS**	**982**	**6**	**7**	**254**	**403**	**121**	**10**	**1**	**0**	**802**
4. **Diarrheal diseases**	**657**	**278**	**13**	**15**	**15**	**10**	**5**	**3**	**1**	**341**
5. **Childhood-cluster diseases**	**323**	**121**	**36**	**5**	**0**	**1**	**0**	**0**	**0**	**164**
a. Pertussis	81	39	1	—	—	—	—	—	—	40
b. Poliomyelitis[a]	2	0	0	0	0	0	0	0	0	1
c. Diphtheria	2	0	0	0	0	0	0	0	0	1
d. Measles	236	82	34	4	0	0	0	—	—	121
e. Tetanus	2	0	0	0	0	0	0	0	0	1
6. **Meningitis**	**403**	**149**	**10**	**18**	**20**	**19**	**7**	**2**	**1**	**225**
7. **Hepatitis B**[b]	**79**	**7**	**2**	**18**	**12**	**5**	**2**	**1**	**0**	**48**
Hepatitis C[b]	**31**	**3**	**1**	**7**	**5**	**2**	**1**	**0**	**0**	**20**
8. **Malaria**	**18**	**3**	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**9**
9. **Tropical-cluster diseases**	**7**	**2**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**5**
a. Trypanosomiasis	0	—	—	—	—	—	—	—	—	—
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	1	0	—	0	—	0	0	0	—	1
d. Leishmaniasis	6	1	1	0	0	0	0	0	0	4
e. Lymphatic filariasis	1	1	—	0	0	—	0	—	—	1
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**0**	**—**	**—**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11. **Dengue**	**0**	**—**	**—**	**—**	**—**	**0**	**—**	**—**	**—**	**0**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
14. **Intestinal nematode infections**	**1**	**0**	**0**	**0**	**—**	**0**	**0**	**0**	**0**	**0**
a. Ascariasis	0	0	0	—	—	—	—	—	0	0
b. Trichuriasis	0	0	0	—	—	—	—	—	—	0
c. Hookworm disease	0	—	—	—	—	0	0	0	0	0
Other intestinal infections	0	0	—	0	—	—	—	—	0	0
Other infectious diseases	522	94	23	40	54	34	16	9	2	273
B. Respiratory infections	**2,305**	**626**	**78**	**48**	**87**	**260**	**152**	**76**	**23**	**1,350**
1. Lower respiratory infections	2,111	573	49	44	81	254	148	74	23	1,245
2. Upper respiratory infections	129	44	7	4	5	6	4	2	0	72
3. Otitis media	65	9	22	0	0	0	0	0	0	33
C. Maternal conditions	**486**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	17	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	124	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	11	—	—	—	—	—	—	—	—	—
4. Obstructed labor	2	—	—	—	—	—	—	—	—	—
5. Abortion	17	—	—	—	—	—	—	—	—	—
Other maternal conditions	315	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**2,125**	**1,203**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**1,203**
1. Low birthweight	822	448	—	—	—	—	0	—	—	448
2. Birth asphyxia and birth trauma	779	444	0	0	—	0	—	—	—	444
Other perinatal conditions	524	311	0	0	0	0	—	0	—	311

Table 3C.3 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
14	*36*	*58*	*52*	*41*	*23*	*17*	*6*	*248*
4,372	**1,425**	**5,019**	**6,106**	**9,168**	**9,818**	**11,359**	**5,333**	**52,598**
2,414	***297***	***854***	***485***	***254***	***142***	***129***	***59***	***4,634***
621	**97**	**330**	**272**	**138**	**62**	**43**	**13**	**1,577**
4	**6**	**59**	**107**	**64**	**26**	**15**	**3**	**284**
8	**2**	**111**	**34**	**2**	**0**	**1**	**0**	**158**
4	0	1	1	0	0	0	0	6
1	2	89	19	1	0	—	—	112
1	0	20	13	0	0	—	—	35
2	0	1	1	1	0	0	0	5
6	**6**	**90**	**60**	**16**	**2**	**0**	**0**	**180**
254	**13**	**13**	**12**	**10**	**6**	**6**	**2**	**315**
115	**37**	**5**	**0**	**1**	**1**	**0**	**0**	**159**
39	1	—	—	0	0	—	—	41
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	1
75	35	5	—	0	0	—	—	115
0	0	0	0	0	0	0	0	1
136	**8**	**7**	**7**	**9**	**6**	**3**	**1**	**178**
5	**2**	**8**	**7**	**6**	**2**	**1**	**0**	**31**
2	**1**	**3**	**2**	**2**	**1**	**0**	**0**	**11**
3	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**9**
0	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
—	—	—	0	—	0	—	—	0
—	—	—	—	—	—	—	—	—
—	—	—	—	0	0	—	—	0
0	1	0	0	0	0	0	0	2
—	0	—	—	—	—	—	—	0
—	—	—	—	—	—	—	—	—
—	**—**	**0**	**0**	**0**	**0**	**—**	**0**	**0**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**0**	**—**	**0**	**0**	**—**	**0**	**0**	**0**
0	0	—	—	—	—	—	—	0
0	0	—	—	—	—	—	—	0
—	—	—	0	—	—	—	—	0
0	—	—	—	0	—	0	0	0
89	19	32	40	28	19	16	6	249
537	**70**	**36**	**44**	**85**	**65**	**75**	**43**	**954**
490	43	32	41	81	62	73	42	865
38	5	3	3	3	2	2	1	57
9	22	0	0	0	0	0	0	32
—	**1**	**357**	**127**	**1**	**0**	**—**	**—**	**486**
—	—	12	5	0	—	—	—	17
—	—	107	16	0	—	—	—	124
—	—	8	3	0	—	—	—	11
—	—	1	0	0	—	—	—	2
—	1	12	4	0	—	—	—	17
—	—	216	99	1	0	—	—	315
923	**0**	**0**	**0**	**0**	**0**	**—**	**—**	**923**
374	—	—	—	—	—	—	—	374
336	0	0	—	—	—	—	—	336
213	0	0	0	0	0	—	—	213

(Continues on the following page.)

Table 3C.3 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
E. Nutritional deficiencies	**1,232**	**325**	**104**	**28**	**27**	**21**	**24**	**8**	**1**	**538**
1. Protein-energy malnutrition	173	75	1	2	3	4	2	1	0	88
2. Iodine deficiency	566	198	73	0	0	0	0	0	0	272
3. Vitamin A deficiency	1	0	0	—	—	—	—	—	0	0
4. Iron-deficiency anemia	421	34	25	24	22	16	21	7	1	150
Other nutritional disorders	72	18	5	2	1	1	1	0	0	29
II. Noncommunicable diseases	***88,969***	***1,998***	***868***	***3,869***	***6,195***	***11,529***	***10,810***	***7,624***	***1,877***	***44,768***
A. Malignant neoplasms	**12,159**	**32**	**63**	**186**	**573**	**2,195**	**2,211**	**1,217**	**162**	**6,638**
1. Mouth and oropharynx cancers	426	0	1	4	34	179	101	33	4	357
2. Esophageal cancer	288	0	0	1	11	88	78	34	4	216
3. Stomach cancer	1,376	0	0	8	74	266	289	165	20	824
4. Colon and rectal cancers	1,290	0	0	8	47	170	224	159	26	633
5. Liver cancer	379	1	1	4	20	75	80	44	5	230
6. Pancreas cancer	481	0	0	1	28	100	87	46	6	270
7. Trachea, bronchus, and lung cancers	2,323	0	1	8	110	684	736	347	29	1,917
8. Melanoma and other skin cancers	160	0	0	4	15	29	18	11	3	80
9. Breast cancer	1,058	—	0	0	1	3	3	2	0	10
10. Cervix uteri cancer	356	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	349	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	350	—	—	—	—	—	—	—	—	—
13. Prostate cancer	283	0	0	1	3	37	105	111	26	283
14. Bladder cancer	300	0	0	1	9	58	91	68	13	240
15. Lymphomas and multiple myeloma	375	3	10	26	39	58	46	23	3	208
16. Leukemia	462	12	25	47	39	52	48	30	5	256
Other malignant neoplasms	1,901	15	24	71	143	395	305	142	18	1,114
B. Other neoplasms	**126**	**2**	**2**	**5**	**9**	**18**	**14**	**9**	**2**	**61**
C. Diabetes mellitus	**1,375**	**1**	**4**	**34**	**109**	**183**	**137**	**78**	**13**	**560**
D. Endocrine disorders	**534**	**131**	**14**	**27**	**28**	**24**	**9**	**5**	**1**	**239**
E. Neuropsychiatric conditions	**14,106**	**595**	**520**	**2,346**	**1,554**	**936**	**374**	**297**	**113**	**6,735**
1. Unipolar depressive disorders	4,268	0	170	488	446	316	110	27	4	1,561
2. Bipolar affective disorder	668	—	17	279	36	1	0	0	0	334
3. Schizophrenia	778	0	76	277	20	6	4	2	0	386
4. Epilepsy	354	9	24	56	60	38	11	4	1	202
5. Alcohol use disorders	1,849	2	14	620	561	294	56	10	1	1,557
6. Alzheimer's and other dementias	1,612	13	7	10	12	37	99	199	97	474
7. Parkinson's disease	228	1	1	1	8	21	33	23	4	93
8. Multiple sclerosis	143	0	3	16	21	14	4	2	0	60
9. Drug use disorders	559	1	5	188	154	73	8	1	0	430
10. Post-traumatic stress disorder	192	0	0	25	17	10	0	0	0	52
11. Obsessive-compulsive disorder	419	—	29	73	62	11	2	4	0	181
12. Panic disorder	340	—	5	100	1	6	1	1	0	114
13. Insomnia (primary)	255	—	2	24	28	24	13	7	1	99
14. Migraine	414	4	62	50	10	1	0	0	0	128
15. Mental retardation, lead-caused	312	148	1	3	2	1	0	0	0	156
Other neuropsychiatric disorders	1,716	417	103	136	116	84	31	16	4	907
F. Sense organ diseases	**5,091**	**1**	**2**	**73**	**304**	**596**	**659**	**390**	**62**	**2,086**
1. Glaucoma	280	0	1	5	10	26	37	27	6	112
2. Cataracts	455	0	0	3	16	44	63	46	10	182
3. Vision disorders, age-related	1,787	0	1	14	27	181	257	168	33	680
4. Hearing loss, adult onset	2,564	—	—	51	250	345	301	149	13	1,109
Other sense organ disorders	5	0	0	1	1	1	0	0	0	3
G. Cardiovascular diseases	**38,281**	**49**	**39**	**390**	**1,993**	**5,225**	**5,843**	**4,694**	**1,335**	**19,569**
1. Rheumatic heart disease	408	1	2	15	45	68	33	12	2	177
2. Hypertensive heart disease	1,346	1	1	8	53	173	192	143	39	611
3. Ischemic heart disease	18,510	0	5	98	944	3,016	3,174	2,444	603	10,286
4. Cerebrovascular disease	12,616	13	15	80	371	1,283	1,852	1,562	405	5,581
5. Inflammatory heart diseases	1,166	15	5	75	202	252	130	79	25	783
Other cardiovascular diseases	4,234	20	10	114	378	432	461	454	261	2,131

Table 3C.3 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
334	**129**	**131**	**41**	**30**	**15**	**11**	**3**	**694**
74	1	2	3	3	2	2	1	85
211	82	0	0	0	0	0	0	294
0	0	0	0	0	0	0	0	1
32	40	122	31	24	12	8	2	271
17	5	7	7	3	1	1	1	43
1,737	***813***	***3,291***	***4,738***	***8,091***	***9,320***	***11,010***	***5,201***	***44,200***
27	**46**	**157**	**688**	**1,611**	**1,504**	**1,227**	**261**	**5,521**
0	0	2	8	22	17	15	5	69
0	—	1	5	16	23	22	6	72
0	0	10	59	124	164	162	34	552
0	0	6	44	150	205	203	49	657
1	1	3	10	35	47	44	8	149
0	0	1	10	49	71	66	14	212
0	1	4	33	120	123	106	18	406
0	0	4	15	23	17	15	6	80
0	0	7	164	410	263	167	37	1,049
—	0	15	93	128	64	46	9	356
0	0	6	48	115	103	66	11	349
0	2	11	47	125	97	60	9	350
—	—	—	—	—	—	—	—	—
0	0	0	3	11	18	21	7	60
2	5	20	26	37	41	31	5	167
10	16	26	30	40	43	34	6	206
13	21	42	94	203	208	170	36	787
2	**2**	**4**	**11**	**19**	**14**	**11**	**3**	**65**
1	**4**	**37**	**115**	**217**	**222**	**178**	**41**	**815**
134	**13**	**33**	**35**	**45**	**17**	**14**	**5**	**294**
528	**478**	**2,124**	**1,504**	**991**	**661**	**647**	**438**	**7,371**
0	165	649	875	622	288	88	20	2,707
0	14	279	39	2	1	0	0	334
0	36	283	61	6	4	1	0	392
9	21	42	38	23	11	7	2	151
0	4	110	100	61	12	3	0	292
13	8	12	11	41	218	447	387	1,138
1	1	1	10	28	45	40	8	135
0	4	20	28	19	7	3	1	83
—	5	59	42	20	3	1	0	129
0	2	69	47	18	2	2	0	140
—	47	83	78	15	8	6	1	238
—	5	199	2	14	2	2	0	226
—	2	29	41	42	23	15	4	156
6	87	172	21	0	0	0	0	286
147	1	3	2	1	0	0	0	155
351	77	114	109	77	37	32	13	809
1	**0**	**43**	**298**	**724**	**977**	**772**	**190**	**3,005**
0	0	1	5	26	59	58	19	168
0	0	0	8	58	84	92	31	273
0	0	1	26	200	396	373	110	1,107
—	—	41	258	440	438	249	30	1,455
1	0	0	0	0	0	0	0	2
41	**26**	**178**	**735**	**2,364**	**4,485**	**7,007**	**3,876**	**18,712**
0	2	14	36	80	61	32	5	231
1	0	5	30	129	208	254	108	735
0	4	33	201	933	2,040	3,262	1,751	8,224
13	8	47	244	916	1,783	2,678	1,347	7,035
11	4	22	55	76	74	91	49	383
16	7	56	169	230	320	689	616	2,104

(Continues on the following page.)

Table 3C.3 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
H. Respiratory diseases	**4,284**	**173**	**81**	**151**	**288**	**533**	**653**	**481**	**103**	**2,462**
1. Chronic obstructive pulmonary disease	2,362	2	2	31	147	312	430	350	74	1,349
2. Asthma	688	36	49	74	39	61	89	45	8	400
Other respiratory diseases	1,234	136	30	45	102	160	133	86	22	713
I. Digestive diseases	**5,675**	**267**	**34**	**301**	**749**	**1,058**	**510**	**240**	**43**	**3,202**
1. Peptic ulcer disease	442	0	3	30	81	102	61	30	5	313
2. Cirrhosis of the liver	2,084	2	7	64	336	540	255	87	8	1,301
3. Appendicitis	31	1	2	4	4	4	3	2	0	18
Other digestive diseases	3,119	263	22	203	329	412	191	121	29	1,570
J. Genitourinary diseases	**1,417**	**42**	**13**	**67**	**109**	**234**	**145**	**101**	**25**	**737**
1. Nephritis and nephrosis	585	5	8	38	68	82	56	37	9	303
2. Benign prostatic hypertrophy	176	—	—	0	0	87	48	33	8	176
Other genitourinary system diseases	656	37	5	29	40	66	42	31	8	258
K. Skin diseases	**237**	**8**	**6**	**20**	**28**	**29**	**13**	**6**	**1**	**112**
L. Musculoskeletal diseases	**3,726**	**10**	**38**	**188**	**400**	**408**	**205**	**95**	**15**	**1,361**
1. Rheumatoid arthritis	578	1	11	32	32	33	21	11	2	141
2. Osteoarthritis	2,281	0	0	63	256	278	153	68	9	827
3. Gout	137	0	0	6	52	45	8	3	1	115
4. Low back pain	143	3	9	14	24	17	6	3	0	76
Other musculoskeletal disorders	587	7	18	74	35	35	17	11	4	201
M. Congenital anomalies	**1,285**	**638**	**19**	**19**	**11**	**8**	**2**	**1**	**0**	**699**
1. Abdominal wall defect	7	4	0	0	0	0	0	0	0	5
2. Anencephaly	8	3	0	0	0	0	0	0	0	3
3. Anorectal atresia	2	2	0	0	0	0	0	0	0	2
4. Cleft lip	3	1	0	0	0	0	0	0	—	1
5. Cleft palate	3	1	0	0	0	0	0	0	—	1
6. Esophageal atresia	6	3	0	0	0	0	0	0	0	3
7. Renal agenesis	6	4	0	0	0	0	0	0	0	4
8. Down syndrome	180	99	1	1	1	1	0	0	0	102
9. Congenital heart anomalies	670	327	9	12	7	3	1	0	0	358
10. Spina bifida	49	23	1	0	0	0	0	0	0	25
Other congenital anomalies	351	171	9	6	3	4	1	1	0	195
N. Oral conditions	**672**	**47**	**33**	**61**	**38**	**82**	**34**	**11**	**2**	**308**
1. Dental caries	375	47	33	35	15	29	14	8	2	181
2. Periodontal disease	19	—	—	2	5	1	1	0	0	9
3. Edentulism	276	—	—	24	18	52	19	3	0	116
Other oral diseases	3	0	0	0	0	0	0	0	0	1
III. Injuries	**16,626**	**384**	**750**	**3,684**	**4,042**	**2,881**	**829**	**252**	**41**	**12,862**
A. Unintentional injuries	**11,366**	**369**	**665**	**2,312**	**2,512**	**1,975**	**597**	**175**	**30**	**8,635**
1. Road traffic accidents	2,264	29	101	608	509	289	81	29	4	1,650
2. Poisonings	2,251	17	15	318	626	594	148	23	2	1,742
3. Falls	1,372	64	127	265	225	186	76	43	13	998
4. Fires	571	49	38	83	119	101	32	10	1	433
5. Drownings	806	32	65	186	209	125	35	8	1	661
6. Other unintentional injuries	4,103	179	320	853	823	679	225	62	9	3,151
B. Intentional injuries	**5,259**	**14**	**85**	**1,372**	**1,530**	**906**	**232**	**77**	**11**	**4,227**
1. Self-inflicted injuries	2,625	0	49	631	719	543	156	58	8	2,165
2. Violence	2,030	9	29	504	591	308	62	16	2	1,520
3. War	585	5	6	233	214	53	14	3	1	530
Other intentional injuries	19	0	0	4	6	3	0	0	0	12

Table 3C.3 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
155	**91**	**136**	**292**	**358**	**319**	**331**	**140**	**1,822**
1	13	41	214	244	194	214	93	1,013
30	60	51	21	34	44	35	13	288
124	18	44	57	80	81	82	35	521
222	**25**	**184**	**360**	**717**	**463**	**377**	**125**	**2,474**
0	1	11	21	33	26	28	9	129
2	5	33	149	293	184	99	18	783
0	1	2	2	2	2	2	0	13
220	17	138	188	389	251	248	98	1,549
28	**16**	**81**	**120**	**153**	**130**	**111**	**40**	**680**
5	10	27	51	66	61	48	14	282
—	—	—	—	—	—	—	—	—
23	7	54	69	87	69	63	26	398
9	**6**	**20**	**24**	**28**	**19**	**12**	**8**	**126**
9	**57**	**218**	**505**	**754**	**456**	**297**	**67**	**2,365**
2	30	107	108	97	51	33	9	437
0	0	30	304	538	341	211	29	1,453
0	0	1	6	6	4	3	1	22
1	10	9	17	17	8	4	1	67
6	16	72	71	96	51	46	28	386
536	**15**	**13**	**9**	**9**	**3**	**1**	**0**	**586**
3	0	0	0	0	0	0	0	3
5	0	0	0	0	0	0	0	6
1	0	0	0	0	0	0	0	1
1	0	0	0	0	0	0	—	1
1	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	3
2	0	0	0	0	0	0	0	2
74	0	1	1	1	0	0	0	78
286	7	8	5	4	1	0	0	311
23	1	0	0	0	0	0	0	24
136	7	4	3	4	1	1	0	156
45	**32**	**63**	**42**	**102**	**51**	**25**	**6**	**365**
45	32	34	15	32	19	14	5	194
—	—	2	5	1	1	1	0	10
—	—	26	21	69	31	11	1	160
0	0	0	0	0	0	0	0	1
221	**316**	**873**	**884**	**823**	**355**	**220**	**73**	**3,764**
211	**262**	**592**	**584**	**593**	**266**	**164**	**58**	**2,731**
27	66	195	137	103	48	32	6	614
15	11	73	137	185	66	19	3	508
35	43	75	55	49	36	50	31	374
25	12	20	26	29	13	10	3	138
19	24	32	29	23	10	6	1	145
90	105	198	200	204	93	47	13	952
10	**54**	**281**	**299**	**229**	**89**	**56**	**15**	**1,032**
—	23	123	117	105	49	34	9	460
8	19	147	166	107	36	21	5	510
0	11	10	14	14	4	1	0	55
1	0	0	2	3	0	0	0	7

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 2000.

b. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.4 DALYs(3,0) by Cause, Sex, and Age in the Latin America and the Caribbean Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*526*	*28*	*56*	*74*	*52*	*31*	*11*	*6*	*2*	*260*
All causes	**104,287**	**12,782**	**3,168**	**11,429**	**9,087**	**8,940**	**5,505**	**4,078**	**1,730**	**56,718**
I. Communicable, maternal, perinatal, and nutritional conditions	***22,741***	***6,922***	***548***	***1,126***	***1,436***	***806***	***365***	***287***	***176***	***11,666***
A. Infectious and parasitic diseases	**10,288**	**2,057**	**371**	**965**	**1,268**	**614**	**223**	**136**	**57**	**5,694**
1. **Tuberculosis**	**966**	**24**	**20**	**115**	**169**	**150**	**70**	**39**	**11**	**599**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**430**	**44**	**1**	**49**	**28**	**1**	**0**	**0**	**0**	**123**
a. Syphilis	77	30	0	9	6	0	0	0	0	46
b. Chlamydia	183	2	0	10	4	0	0	—	—	16
c. Gonorrhea	157	11	1	30	18	0	0	0	0	60
d. Other sexually transmitted diseases	12	0	—	—	0	0	—	0	0	0
3. **HIV/AIDS**	**2,354**	**91**	**41**	**430**	**735**	**194**	**16**	**2**	**0**	**1,510**
4. **Diarrheal diseases**	**2,362**	**983**	**113**	**39**	**34**	**25**	**13**	**10**	**6**	**1,224**
5. **Childhood-cluster diseases**	**397**	**191**	**5**	**2**	**1**	**1**	**0**	**0**	**0**	**200**
a. Pertussis	366	179	3	—	—	—	0	—	—	182
b. Poliomyelitis[a]	6	0	1	1	1	0	0	0	0	3
c. Diphtheria	8	6	0	—	0	—	—	—	0	6
d. Measles	0	0	0	—	—	—	—	—	—	0
e. Tetanus	17	6	1	0	0	1	0	0	0	9
6. **Meningitis**	**591**	**214**	**31**	**35**	**27**	**17**	**6**	**4**	**1**	**335**
7. **Hepatitis B**[b]	**95**	**10**	**3**	**17**	**14**	**11**	**4**	**2**	**0**	**61**
Hepatitis C[b]	**37**	**0**	**0**	**1**	**6**	**9**	**3**	**1**	**0**	**20**
8. **Malaria**	**111**	**34**	**10**	**6**	**5**	**3**	**1**	**1**	**0**	**60**
9. **Tropical-cluster diseases**	**696**	**7**	**12**	**145**	**80**	**76**	**34**	**14**	**4**	**372**
a. Trypanosomiasis	0	—	—	—	—	—	0	—	—	0
b. Chagas' disease	583	0	0	125	62	67	32	12	4	302
c. Schistosomiasis	66	2	6	9	9	6	2	1	0	34
d. Leishmaniasis	37	5	4	8	7	2	0	0	0	28
e. Lymphatic filariasis	9	0	2	2	1	1	0	0	0	7
f. Onchocerciasis	2	0	0	0	0	0	0	0	0	1
10. **Leprosy**	**18**	**0**	**2**	**2**	**2**	**2**	**1**	**1**	**0**	**10**
11. **Dengue**	**59**	**7**	**19**	**1**	**1**	**1**	**0**	**0**	**0**	**29**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**191**	**0**	**0**	**1**	**11**	**16**	**11**	**6**	**2**	**47**
14. **Intestinal nematode infections**	**139**	**22**	**43**	**0**	**1**	**1**	**1**	**0**	**0**	**69**
a. Ascariasis	46	6	16	0	0	0	0	0	0	23
b. Trichuriasis	50	5	20	0	0	0	0	0	0	25
c. Hookworm disease	12	1	5	0	0	0	0	0	0	6
Other intestinal infections	31	9	2	0	1	0	1	0	0	14
Other infectious diseases	1,842	429	71	122	154	109	63	56	31	1,035
B. Respiratory infections	**3,271**	**933**	**125**	**93**	**119**	**147**	**107**	**117**	**93**	**1,733**
1. Lower respiratory infections	3,043	886	75	88	116	144	105	115	92	1,621
2. Upper respiratory infections	80	22	3	4	3	2	1	1	1	38
3. Otitis media	147	26	46	1	1	1	0	0	0	74
C. Maternal conditions	**1,329**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	98	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	337	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	112	—	—	—	—	—	—	—	—	—
4. Obstructed labor	52	—	—	—	—	—	—	—	—	—
5. Abortion	117	—	—	—	—	—	—	—	—	—
Other maternal conditions	613	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[c]	**6,296**	**3,473**	**0**	**0**	**0**	**0**	**—**	**—**	**—**	**3,473**
1. Low birthweight	795	432	—	—	—	—	—	—	—	432
2. Birth asphyxia and birth trauma	3,765	2,072	0	0	0	0	—	—	—	2,072
Other perinatal conditions	1,736	969	0	0	—	—	—	—	—	969
E. Nutritional deficiencies	**1,558**	**459**	**51**	**68**	**48**	**44**	**35**	**34**	**26**	**766**
1. Protein-energy malnutrition	916	345	15	18	20	23	20	23	19	482
2. Iodine deficiency	110	41	13	0	0	0	0	0	0	54
3. Vitamin A deficiency	1	0	—	—	—	—	0	—	0	0
4. Iron-deficiency anemia	477	62	22	48	25	18	12	9	5	201
Other nutritional disorders	55	11	1	2	4	3	3	3	1	29

Table 3C.4 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
27	*54*	*73*	*55*	*33*	*13*	*8*	*3*	*266*
10,831	**2,754**	**7,464**	**6,602**	**7,321**	**5,402**	**4,615**	**2,580**	**47,569**
5,816	***566***	***1,938***	***1,298***	***568***	***319***	***321***	***250***	***11,075***
1,754	**368**	**887**	**733**	**416**	**200**	**155**	**82**	**4,594**
18	**22**	**96**	**95**	**71**	**36**	**22**	**8**	**367**
27	**5**	**205**	**64**	**4**	**1**	**1**	**0**	**306**
14	0	10	7	0	0	0	0	31
2	3	137	23	1	0	0	0	167
11	1	55	30	0	0	—	—	97
0	0	3	3	3	1	1	0	11
88	**40**	**299**	**338**	**72**	**5**	**1**	**0**	**844**
905	**108**	**36**	**30**	**23**	**15**	**13**	**9**	**1,139**
187	**7**	**2**	**1**	**0**	**0**	**0**	**0**	**197**
181	3	0	—	—	—	—	—	184
0	1	1	1	0	0	0	0	3
0	2	—	—	0	—	—	—	2
0	0	—	—	—	—	—	—	0
6	1	0	0	0	0	0	0	8
164	**33**	**18**	**12**	**13**	**8**	**5**	**1**	**256**
6	**3**	**4**	**6**	**7**	**4**	**2**	**2**	**34**
0	**0**	**0**	**2**	**7**	**5**	**2**	**0**	**17**
26	**10**	**6**	**4**	**3**	**1**	**1**	**0**	**51**
4	**8**	**148**	**55**	**62**	**27**	**14**	**5**	**324**
—	0	—	—	—	—	—	—	0
0	0	138	46	56	24	13	5	281
2	6	7	7	5	2	1	1	31
2	1	2	2	1	0	0	0	9
0	0	1	0	1	0	0	0	2
0	0	0	0	0	0	0	0	1
0	**2**	**2**	**2**	**1**	**0**	**0**	**0**	**8**
5	**20**	**1**	**1**	**1**	**0**	**0**	**0**	**29**
—	—	—	—	—	—	—	—	—
0	**1**	**5**	**34**	**52**	**27**	**18**	**7**	**144**
25	**43**	**0**	**0**	**0**	**0**	**0**	**0**	**71**
6	15	0	0	0	0	0	0	22
5	20	0	0	0	0	0	0	25
1	5	0	0	0	0	0	0	6
12	4	0	0	0	0	0	0	17
296	65	66	88	99	70	75	48	807
830	**121**	**71**	**75**	**99**	**89**	**124**	**128**	**1,537**
780	72	67	70	96	87	122	127	1,422
26	4	2	3	2	2	2	1	43
24	45	2	1	1	0	0	0	73
0	**6**	**891**	**426**	**6**	**—**	**0**	**0**	**1,329**
0	0	46	51	1	—	—	—	98
—	0	277	60	0	—	—	—	337
—	1	65	43	2	—	—	0	112
—	—	38	13	0	—	—	—	52
—	3	90	23	0	—	—	—	117
—	2	374	234	3	—	0	0	613
2,823	**0**	**—**	**0**	**—**	**—**	**—**	**0**	**2,823**
363	—	—	—	—	—	—	—	363
1,693	0	—	—	—	—	—	0	1,693
767	0	—	0	—	—	—	0	767
408	**71**	**89**	**65**	**47**	**29**	**43**	**39**	**792**
311	16	11	11	16	16	26	28	435
42	14	0	0	0	0	0	0	56
0	—	—	0	0	—	—	0	0
47	40	75	51	28	11	15	9	276
8	1	3	3	3	2	2	3	25

(Continues on the following page.)

Table 3C.4 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***67,815***	***5,265***	***1,686***	***5,194***	***4,811***	***6,982***	***4,831***	***3,653***	***1,508***	***33,930***
A. Malignant neoplasms	**7,060**	**56**	**94**	**205**	**338**	**905**	**835**	**639**	**218**	**3,289**
1. Mouth and oropharynx cancers	204	0	0	3	18	67	40	19	5	153
2. Esophageal cancer	215	—	0	1	13	64	48	28	8	160
3. Stomach cancer	735	0	1	10	45	133	121	88	29	427
4. Colon and rectal cancers	485	0	0	9	28	66	60	48	17	229
5. Liver cancer	277	2	1	4	15	43	39	27	8	139
6. Pancreas cancer	248	0	0	1	10	37	37	26	8	120
7. Trachea, bronchus, and lung cancers	728	0	1	5	31	157	160	107	25	486
8. Melanoma and other skin cancers	97	0	0	3	10	16	12	9	4	53
9. Breast cancer	642	0	—	0	1	2	1	1	0	4
10. Cervix uteri cancer	494	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	254	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	152	—	—	—	—	—	—	—	—	—
13. Prostate cancer	340	0	0	1	2	34	98	137	67	340
14. Bladder cancer	100	0	0	1	3	15	20	21	9	68
15. Lymphomas and multiple myeloma	383	5	16	33	37	53	40	26	7	217
16. Leukemia	444	24	45	66	36	30	20	16	6	242
Other malignant neoplasms	1,263	23	29	67	90	190	141	86	25	651
B. Other neoplasms	**196**	**9**	**7**	**12**	**13**	**22**	**17**	**13**	**5**	**97**
C. Diabetes mellitus	**2,775**	**2**	**3**	**35**	**152**	**386**	**305**	**203**	**61**	**1,149**
D. Endocrine disorders	**3,150**	**1,221**	**64**	**81**	**71**	**92**	**47**	**37**	**19**	**1,632**
E. Neuropsychiatric conditions	**18,781**	**1,522**	**758**	**3,667**	**1,717**	**951**	**355**	**248**	**144**	**9,362**
1. Unipolar depressive disorders	5,219	0	266	621	591	320	94	20	5	1,917
2. Bipolar affective disorder	883	0	23	362	41	1	0	0	0	428
3. Schizophrenia	1,078	0	77	383	43	9	2	1	0	516
4. Epilepsy	737	33	85	121	85	43	13	7	2	388
5. Alcohol use disorders	2,883	1	30	1,271	590	371	72	18	2	2,355
6. Alzheimer's and other dementias	1,215	20	9	10	7	28	104	165	119	463
7. Parkinson's disease	90	0	0	0	4	12	11	12	6	46
8. Multiple sclerosis	97	—	4	18	12	4	1	1	0	41
9. Drug use disorders	746	—	7	370	152	28	1	0	0	559
10. Post-traumatic stress disorder	177	0	2	29	17	8	0	0	0	58
11. Obsessive-compulsive disorder	480	—	4	121	59	30	8	2	0	225
12. Panic disorder	409	—	3	123	1	5	1	0	0	134
13. Insomnia (primary)	312	—	4	39	45	29	15	3	1	136
14. Migraine	736	6	68	114	5	0	0	0	0	193
15. Mental retardation, lead-caused	1,500	753	0	1	0	0	0	0	0	755
Other neuropsychiatric disorders	2,217	710	177	83	64	61	29	19	8	1,150
F. Sense organ diseases	**5,465**	**6**	**18**	**82**	**484**	**801**	**589**	**384**	**91**	**2,453**
1. Glaucoma	304	1	2	5	24	37	27	22	7	124
2. Cataracts	1,813	3	11	42	122	248	166	103	35	731
3. Vision disorders, age-related	1,639	1	5	34	140	222	143	107	25	677
4. Hearing loss, adult onset	1,706	—	—	1	198	293	253	152	23	920
Other sense organ disorders	3	0	0	0	0	0	0	0	0	2
G. Cardiovascular diseases	**11,827**	**84**	**45**	**243**	**710**	**1,733**	**1,531**	**1,285**	**606**	**6,237**
1. Rheumatic heart disease	133	0	3	12	10	12	6	3	1	49
2. Hypertensive heart disease	1,052	1	1	12	46	128	122	112	62	484
3. Ischemic heart disease	4,328	1	10	70	245	781	696	541	206	2,550
4. Cerebrovascular disease	3,936	11	10	47	214	561	501	419	176	1,939
5. Inflammatory heart diseases	557	15	5	33	62	87	63	44	17	326
Other cardiovascular diseases	1,821	56	15	69	133	164	142	164	144	889
H. Respiratory diseases	**5,198**	**427**	**252**	**352**	**312**	**495**	**398**	**347**	**172**	**2,754**
1. Chronic obstructive pulmonary disease	2,037	14	2	18	126	304	262	224	107	1,057
2. Asthma	1,547	189	216	262	73	39	16	12	6	812
Other respiratory diseases	1,614	224	33	73	113	152	121	111	59	885

Table 3C.4 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
4,644	***1,770***	***4,680***	***4,819***	***6,496***	***4,981***	***4,215***	***2,280***	***33,885***
49	**74**	**178**	**641**	**1,194**	**812**	**602**	**222**	**3,771**
0	0	2	6	14	13	12	5	52
—	0	0	4	15	16	13	5	54
0	1	9	46	82	72	67	29	307
0	0	6	34	70	62	57	27	256
2	1	4	13	40	38	31	11	139
0	0	1	9	35	38	33	13	128
0	0	3	27	77	71	49	15	242
0	0	2	8	12	8	8	5	44
0	0	8	144	262	123	73	27	638
—	0	33	124	191	84	49	13	494
0	0	7	58	95	52	32	10	254
0	1	10	26	55	33	21	5	152
—	—	—	—	—	—	—	—	—
0	0	0	2	8	8	9	5	32
3	9	15	23	43	36	29	9	166
22	35	38	34	31	19	16	6	201
21	26	37	84	163	139	103	38	611
6	**6**	**10**	**16**	**23**	**16**	**14**	**6**	**98**
3	**5**	**37**	**160**	**492**	**450**	**349**	**130**	**1,625**
980	**60**	**99**	**96**	**127**	**64**	**56**	**36**	**1,518**
1,420	**813**	**3,207**	**1,936**	**951**	**419**	**355**	**317**	**9,418**
0	256	1,110	1,091	602	186	44	14	3,303
0	23	383	47	2	1	0	0	455
0	10	430	108	10	2	2	0	562
30	79	107	72	38	14	7	2	350
0	8	296	129	77	15	3	1	528
20	9	11	8	33	136	256	281	753
0	0	0	4	12	10	11	6	44
—	5	25	18	6	1	1	0	56
—	7	122	50	9	1	0	0	188
0	1	54	47	15	1	1	0	119
—	2	146	54	42	6	4	1	255
—	8	251	2	11	1	1	0	275
—	3	51	52	38	24	6	2	176
20	241	115	166	0	0	0	0	543
743	0	1	1	0	0	0	0	745
607	163	107	88	54	21	18	9	1,067
2	**8**	**48**	**298**	**978**	**899**	**606**	**172**	**3,012**
0	1	4	25	42	48	45	16	180
1	5	18	83	384	314	200	78	1,082
0	1	25	56	283	297	239	60	962
—	—	1	134	269	240	122	19	785
0	0	0	0	0	0	0	0	2
67	**48**	**180**	**546**	**1,251**	**1,244**	**1,337**	**916**	**5,590**
0	4	13	20	24	12	8	3	84
1	1	12	45	125	130	146	108	568
1	12	38	114	392	469	471	282	1,778
8	9	44	238	510	451	457	280	1,997
13	5	21	31	51	45	41	23	231
43	17	52	98	149	136	214	222	933
384	**300**	**290**	**361**	**366**	**284**	**277**	**181**	**2,444**
36	5	50	254	223	165	155	91	980
158	270	180	33	40	26	19	8	735
190	25	59	74	103	93	103	82	729

(Continues on the following page.)

Table 3C.4 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**5,091**	**510**	**78**	**231**	**606**	**833**	**414**	**251**	**96**	**3,020**
1. Peptic ulcer disease	212	1	2	14	24	37	25	19	9	132
2. Cirrhosis of the liver	1,513	3	3	67	355	461	181	76	16	1,162
3. Appendicitis	55	2	5	8	6	5	3	2	1	33
Other digestive diseases	3,311	505	68	142	220	330	205	153	70	1,693
J. Genitourinary diseases	**1,667**	**99**	**33**	**54**	**79**	**395**	**114**	**110**	**61**	**946**
1. Nephritis and nephrosis	789	25	25	41	56	91	76	65	33	412
2. Benign prostatic hypertrophy diseases	299	—	—	0	0	266	14	12	7	299
Other genitourinary system	580	74	8	13	23	38	24	34	21	235
K. Skin diseases	**410**	**28**	**18**	**33**	**28**	**28**	**18**	**17**	**10**	**181**
L. Musculoskeletal diseases	**2,728**	**18**	**49**	**113**	**266**	**303**	**159**	**110**	**25**	**1,044**
1. Rheumatoid arthritis	555	2	12	25	31	30	11	7	2	120
2. Osteoarthritis	1,283	0	0	15	104	175	117	85	14	510
3. Gout	176	—	—	7	82	54	9	2	1	154
4. Low back pain	148	5	13	18	24	14	4	2	1	80
Other musculoskeletal disorders	566	12	24	49	26	30	18	15	7	180
M. Congenital anomalies	**2,460**	**1,195**	**29**	**25**	**11**	**6**	**2**	**1**	**0**	**1,269**
1. Abdominal wall defect	29	15	0	0	0	—	0	0	0	15
2. Anencephaly	73	31	0	0	0	—	0	0	0	31
3. Anorectal atresia	8	4	0	0	0	—	0	0	0	5
4. Cleft lip	17	9	0	0	0	—	0	0	0	9
5. Cleft palate	15	7	0	0	0	—	0	0	0	7
6. Esophageal atresia	25	14	0	0	0	—	0	0	0	14
7. Renal agenesis	11	6	0	1	0	0	0	0	0	7
8. Down syndrome	309	152	2	3	2	1	0	0	0	160
9. Congenital heart anomalies	1,172	566	15	15	5	2	1	0	0	605
10. Spina bifida	245	112	1	1	0	0	0	0	0	114
Other congenital anomalies	557	278	10	6	3	3	1	1	0	302
N. Oral conditions	**1,005**	**87**	**239**	**60**	**23**	**31**	**45**	**9**	**1**	**495**
1. Dental caries	826	84	238	58	21	10	4	2	1	417
2. Periodontal disease	24	—	—	1	2	5	2	1	0	11
3. Edentulism	141	—	—	—	—	15	39	6	0	60
Other oral diseases	15	3	1	1	1	1	0	0	0	7
III. Injuries	**13,731**	**594**	**934**	**5,109**	**2,840**	**1,152**	**310**	**137**	**45**	**11,122**
A. Unintentional injuries	**7,656**	**570**	**778**	**1,998**	**1,309**	**704**	**221**	**106**	**38**	**5,723**
1. Road traffic accidents	2,686	77	171	816	574	285	72	31	7	2,034
2. Poisonings	87	7	3	18	17	9	3	1	0	58
3. Falls	729	58	79	150	94	59	26	18	10	494
4. Fires	163	28	15	22	17	13	3	2	1	101
5. Drownings	485	48	60	160	76	34	9	4	1	392
6. Other unintentional injuries	3,506	352	450	832	531	303	107	50	18	2,644
B. Intentional injuries	**6,076**	**24**	**156**	**3,112**	**1,531**	**448**	**89**	**31**	**8**	**5,399**
1. Self-inflicted injuries	711	0	17	228	156	88	28	13	3	534
2. Violence	5,154	24	137	2,788	1,302	343	56	17	4	4,670
3. War	189	1	2	80	69	16	5	1	0	173
Other intentional injuries	22	0	0	16	4	1	0	0	0	21

Table 3C.4 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
401	**59**	**188**	**270**	**459**	**301**	**258**	**136**	**2,071**
1	1	8	12	18	15	17	11	81
3	2	15	70	121	77	48	13	351
2	4	5	4	4	2	2	1	22
396	52	160	184	317	207	192	111	1,618
82	**43**	**89**	**96**	**140**	**103**	**98**	**71**	**722**
24	30	38	47	78	65	58	36	377
—	—	—	—	—	—	—	—	—
58	13	51	49	62	38	39	34	345
35	**17**	**38**	**38**	**36**	**22**	**23**	**20**	**230**
13	**79**	**235**	**323**	**438**	**308**	**219**	**69**	**1,685**
3	43	132	114	85	33	19	7	435
—	0	5	94	245	228	163	38	774
0	0	1	11	6	2	2	0	22
2	15	12	18	14	4	2	1	67
8	22	85	87	87	41	33	23	387
1,117	**27**	**22**	**12**	**8**	**3**	**2**	**0**	**1,191**
14	0	0	0	—	—	0	0	14
41	0	0	0	0	—	0	—	41
3	0	0	0	0	0	0	—	3
8	0	0	0	—	—	0	—	8
7	0	0	0	—	—	0	—	7
10	0	0	0	0	—	0	0	10
3	0	0	0	0	0	0	0	4
142	2	2	2	2	0	0	0	149
527	15	13	6	4	1	1	0	566
129	1	1	0	0	—	—	—	132
232	8	6	4	3	1	1	0	255
84	**231**	**60**	**24**	**34**	**56**	**18**	**3**	**510**
81	230	58	22	11	4	3	1	409
—	—	1	2	6	2	1	1	13
—	—	—	—	17	49	14	1	81
3	1	1	1	0	0	0	0	8
371	**418**	**846**	**485**	**258**	**103**	**79**	**50**	**2,609**
355	**358**	**514**	**308**	**192**	**87**	**71**	**48**	**1,932**
64	111	217	134	77	28	17	5	651
6	4	8	6	3	1	1	0	29
47	50	43	21	17	15	22	20	235
22	11	11	7	6	2	2	1	63
31	27	20	8	4	2	1	0	93
185	156	214	132	85	39	29	21	862
16	**59**	**332**	**177**	**66**	**16**	**8**	**2**	**677**
0	16	90	38	22	6	3	1	177
16	42	239	134	40	8	4	1	484
0	2	3	4	4	1	0	0	16
0	—	0	0	0	0	0	0	1

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. These figures include late effects of polio cases with onset prior to regional certification of polio eradication in 2002.

b. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

c. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.5 DALYs(3,0) by Cause, Sex, and Age in the Middle East and North Africa Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*310*	*19*	*39*	*47*	*29*	*15*	*5*	*3*	*1*	*157*
All causes	**65,570**	**11,155**	**2,606**	**5,127**	**4,351**	**5,113**	**3,267**	**2,310**	**630**	**34,559**
I. Communicable, maternal, perinatal, and nutritional conditions	***17,739***	***6,784***	***503***	***309***	***298***	***286***	***187***	***139***	***45***	***8,552***
A. Infectious and parasitic diseases	**7,320**	**2,424**	**275**	**219**	**235**	**228**	**131**	**84**	**23**	**3,619**
1. **Tuberculosis**	**522**	**37**	**12**	**42**	**67**	**57**	**35**	**21**	**5**	**275**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**342**	**16**	**1**	**33**	**19**	**17**	**7**	**3**	**1**	**97**
a. Syphilis	64	3	0	4	6	12	4	1	0	30
b. Chlamydia	166	2	0	11	3	0	0	—	—	16
c. Gonorrhea	97	10	0	18	9	0	0	—	—	39
d. Other sexually transmitted diseases	15	0	0	0	1	5	3	2	0	11
3. **HIV/AIDS**	**105**	**9**	**1**	**22**	**25**	**7**	**0**	**0**	**0**	**64**
4. **Diarrheal diseases**	**2,571**	**1,207**	**47**	**23**	**22**	**18**	**10**	**8**	**5**	**1,339**
5. **Childhood-cluster diseases**	**915**	**357**	**81**	**15**	**2**	**1**	**0**	**0**	**0**	**457**
a. Pertussis	326	161	2	—	—	—	—	—	—	164
b. Poliomyelitis	8	0	1	2	1	0	0	0	0	4
c. Diphtheria	1	0	0	0	—	—	—	0	—	0
d. Measles	470	148	74	12	—	—	—	—	—	234
e. Tetanus	110	48	4	1	1	1	0	0	0	55
6. **Meningitis**	**328**	**113**	**13**	**10**	**4**	**3**	**2**	**1**	**0**	**146**
7. **Hepatitis B**[a]	**111**	**14**	**3**	**4**	**9**	**18**	**9**	**5**	**0**	**63**
Hepatitis C[a]	**55**	**6**	**1**	**2**	**4**	**9**	**5**	**2**	**0**	**30**
8. **Malaria**	**668**	**265**	**21**	**14**	**10**	**7**	**2**	**1**	**1**	**322**
9. **Tropical-cluster diseases**	**281**	**13**	**33**	**29**	**27**	**37**	**22**	**13**	**2**	**176**
a. Trypanosomiasis	22	1	4	4	2	2	0	0	0	13
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	207	4	18	18	20	34	21	12	2	129
d. Leishmaniasis	48	8	11	6	4	2	0	0	0	31
e. Lymphatic filariasis	4	0	0	1	1	0	0	0	0	2
f. Onchocerciasis	0	0	0	0	0	0	0	0	0	0
10. **Leprosy**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**—**	**1**
11. **Dengue**	**8**	**1**	**3**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**273**	**0**	**0**	**3**	**22**	**23**	**15**	**9**	**2**	**74**
14. **Intestinal nematode infections**	**64**	**5**	**27**	**0**	**0**	**0**	**0**	**0**	**0**	**33**
a. Ascariasis	47	4	20	0	0	—	—	—	—	24
b. Trichuriasis	0	—	0	—	—	—	—	—	—	0
c. Hookworm disease	17	1	7	0	0	0	0	0	0	9
Other intestinal infections	0	—	0	0	0	0	0	0	0	0
Other infectious diseases	1,073	381	31	22	24	30	24	21	7	539
B. Respiratory infections	**3,141**	**1,323**	**92**	**33**	**31**	**38**	**44**	**47**	**20**	**1,629**
1. Lower respiratory infections	2,974	1,283	57	31	29	37	43	46	19	1,545
2. Upper respiratory infections	72	24	3	2	1	1	2	2	0	36
3. Otitis media	95	16	32	0	0	—	0	—	—	48
C. Maternal conditions	**1,266**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	—
1. Maternal hemorrhage	121	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	222	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	54	—	—	—	—	—	—	—	—	—
4. Obstructed labor	96	—	—	—	—	—	—	—	—	—
5. Abortion	152	—	—	—	—	—	—	—	—	—
Other maternal conditions	620	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**4,155**	**2,415**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**2,415**
1. Low birthweight	1,839	1,072	—	—	—	—	—	—	—	1,072
2. Birth asphyxia and birth trauma	1,595	928	—	—	—	—	—	—	—	928
Other perinatal conditions	722	414	—	—	—	—	—	—	—	414
E. Nutritional deficiencies	**1,857**	**622**	**136**	**57**	**32**	**19**	**11**	**8**	**2**	**889**
1. Protein-energy malnutrition	712	351	3	0	0	1	1	1	1	358
2. Iodine deficiency	506	192	62	0	0	0	0	0	0	254
3. Vitamin A deficiency	5	1	0	0	0	0	0	0	0	3
4. Iron-deficiency anemia	587	56	70	57	32	17	10	7	2	249
Other nutritional disorders	47	23	1	0	0	0	0	0	0	25

Table 3C.5 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
18	*37*	*45*	*28*	*15*	*6*	*3*	*1*	*153*
9,810	**2,313**	**4,666**	**3,887**	**4,214**	**2,904**	**2,368**	**849**	**31,011**
5,945	***595***	***1,244***	***755***	***272***	***166***	***148***	***62***	***9,187***
2,388	**262**	**344**	**246**	**203**	**123**	**99**	**35**	**3,701**
31	**14**	**59**	**65**	**46**	**21**	**10**	**3**	**248**
17	**5**	**161**	**39**	**11**	**9**	**3**	**—**	**245**
5	0	8	7	6	4	3	—	34
2	3	122	17	2	2	—	—	149
10	1	31	14	2	2	—	—	58
0	0	0	0	2	2	0	—	4
9	**1**	**15**	**12**	**3**	**0**	**0**	**0**	**41**
1,127	**39**	**16**	**13**	**12**	**10**	**9**	**7**	**1,232**
364	**76**	**15**	**2**	**1**	**0**	**0**	**0**	**458**
160	2	—	—	—	—	—	—	163
0	1	2	1	0	0	0	0	4
0	0	—	—	—	—	—	0	0
155	69	12	—	—	—	—	—	236
48	4	1	1	1	0	0	0	55
152	**13**	**6**	**4**	**3**	**2**	**2**	**0**	**182**
10	**4**	**2**	**4**	**11**	**9**	**7**	**2**	**49**
4	**2**	**1**	**3**	**6**	**4**	**4**	**1**	**25**
294	**19**	**12**	**9**	**6**	**3**	**2**	**1**	**346**
7	**22**	**19**	**13**	**16**	**10**	**15**	**4**	**105**
1	3	2	1	1	0	0	0	9
—	—	—	—	—	—	—	—	—
3	12	12	9	13	10	14	4	78
3	7	4	2	2	0	0	0	18
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**
1	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
0	**1**	**8**	**57**	**60**	**38**	**28**	**8**	**199**
5	**26**	**0**	**0**	**0**	**0**	**0**	**0**	**32**
4	19	—	—	—	—	—	—	23
—	0	—	—	—	—	—	—	0
1	7	0	0	0	0	0	0	8
—	0	0	0	0	0	0	0	0
368	37	30	26	27	17	20	10	534
1,214	**109**	**39**	**31**	**29**	**30**	**37**	**22**	**1,512**
1,173	75	37	30	28	28	36	22	1,429
26	4	2	1	1	2	1	0	36
16	31	0	—	0	—	—	0	46
—	**9**	**801**	**443**	**12**	**—**	**—**	**—**	**1,266**
—	0	54	63	4	—	—	—	121
—	0	170	52	1	—	—	—	222
—	0	24	26	4	—	—	—	54
—	—	68	28	0	—	—	—	96
—	9	122	21	0	—	—	—	152
—	0	363	254	3	—	—	—	620
1,740	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**1,740**
766	—	—	—	—	—	—	—	766
667	—	—	—	—	—	—	—	667
307	—	—	—	—	—	—	—	307
602	**214**	**60**	**35**	**28**	**12**	**12**	**5**	**968**
341	6	1	1	0	2	2	0	354
189	62	0	0	0	0	0	0	252
1	0	0	0	0	0	0	0	2
53	144	58	33	27	10	9	4	338
18	2	0	0	0	1	1	0	23

(Continues on the following page.)

Table 3C.5 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***38,860***	***3,650***	***1,005***	***2,643***	***2,949***	***4,212***	***2,871***	***2,069***	***565***	***19,964***
A. Malignant neoplasms	**2,747**	**54**	**71**	**128**	**206**	**390**	**334**	**226**	**48**	**1,456**
1. Mouth and oropharynx cancers	78	1	1	4	12	17	12	6	1	54
2. Esophageal cancer	72	0	0	1	5	14	12	8	1	41
3. Stomach cancer	252	1	2	5	18	42	43	32	6	149
4. Colon and rectal cancers	164	0	1	8	20	27	19	12	3	90
5. Liver cancer	138	1	1	3	11	26	23	14	2	82
6. Pancreas cancer	55	0	0	0	4	11	9	6	1	31
7. Trachea, bronchus, and lung cancers	283	1	1	5	23	68	66	41	7	211
8. Melanoma and other skin cancers	19	0	0	1	1	2	2	2	1	9
9. Breast cancer	273	—	—	—	0	0	0	—	—	0
10. Cervix uteri cancer	93	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	22	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	42	—	—	—	—	—	—	—	—	—
13. Prostate cancer	64	0	0	1	2	12	19	24	6	64
14. Bladder cancer	214	0	0	3	18	61	50	33	8	174
15. Lymphomas and multiple myeloma	232	7	20	27	30	27	16	9	2	138
16. Leukemia	307	21	30	51	24	21	14	9	2	173
Other malignant neoplasms	440	22	15	19	37	65	48	28	7	241
B. Other neoplasms	**324**	**6**	**10**	**20**	**34**	**41**	**34**	**23**	**4**	**172**
C. Diabetes mellitus	**843**	**3**	**4**	**31**	**83**	**111**	**78**	**52**	**11**	**372**
D. Endocrine disorders	**1,152**	**392**	**27**	**30**	**28**	**50**	**31**	**23**	**5**	**586**
E. Neuropsychiatric conditions	**8,310**	**1,096**	**426**	**1,408**	**727**	**351**	**116**	**87**	**32**	**4,244**
1. Unipolar depressive disorders	2,027	0	130	256	267	131	37	8	1	831
2. Bipolar affective disorder	567	0	17	246	24	1	0	0	0	288
3. Schizophrenia	696	—	30	292	29	1	1	0	0	353
4. Epilepsy	248	16	28	46	25	12	4	2	1	134
5. Alcohol use disorders	79	—	0	23	34	13	2	1	0	73
6. Alzheimer's and other dementias	292	11	5	5	3	10	26	48	22	130
7. Parkinson's disease	81	3	2	5	9	12	8	5	1	44
8. Multiple sclerosis	55	—	3	12	7	1	1	0	0	24
9. Drug use disorders	786	—	6	278	241	117	6	1	0	649
10. Post-traumatic stress disorder	124	0	1	20	9	4	0	0	0	34
11. Obsessive-compulsive disorder	300	—	45	56	26	4	1	0	0	132
12. Panic disorder	264	—	3	84	1	2	0	0	0	90
13. Insomnia (primary)	74	—	1	6	9	5	4	1	0	26
14. Migraine	227	6	54	7	2	0	0	0	0	69
15. Mental retardation, lead-caused	725	336	13	15	3	1	0	0	0	369
Other neuropsychiatric disorders	1,764	725	88	57	40	36	26	20	5	997
F. Sense organ diseases	**5,380**	**3**	**37**	**239**	**681**	**886**	**433**	**171**	**35**	**2,485**
1. Glaucoma	681	1	10	48	78	82	42	20	4	286
2. Cataracts	1,491	2	26	120	179	189	92	49	11	667
3. Vision disorders, age-related	1,801	0	1	58	233	296	159	58	14	819
4. Hearing loss, adult onset	1,398	—	—	13	191	319	138	43	4	708
Other sense organ disorders	8	0	0	—	0	0	1	2	1	4
G. Cardiovascular diseases	**9,528**	**169**	**105**	**267**	**550**	**1,353**	**1,246**	**1,063**	**318**	**5,071**
1. Rheumatic heart disease	250	6	17	35	32	18	5	4	1	118
2. Hypertensive heart disease	933	6	3	10	36	120	134	126	41	474
3. Ischemic heart disease	4,315	7	10	90	281	810	696	535	132	2,561
4. Cerebrovascular disease	1,948	49	43	69	83	215	247	233	69	1,008
5. Inflammatory heart diseases	401	24	9	17	26	48	42	42	14	222
Other cardiovascular diseases	1,680	77	23	46	91	142	122	123	62	687
H. Respiratory diseases	**2,285**	**260**	**107**	**156**	**252**	**218**	**168**	**143**	**42**	**1,346**
1. Chronic obstructive pulmonary disease	816	9	2	26	163	127	96	85	24	532
2. Asthma	553	47	79	102	56	20	4	2	1	311
Other respiratory diseases	916	204	26	28	33	71	68	56	17	502

Table 3C.5 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
3,355	***1,009***	***2,544***	***2,720***	***3,713***	***2,640***	***2,147***	***768***	***18,897***
41	**56**	**116**	**284**	**394**	**218**	**147**	**33**	**1,290**
0	0	2	5	8	5	3	1	24
0	0	1	4	10	8	7	1	31
0	1	7	20	30	23	18	4	103
0	1	5	18	21	15	11	3	74
1	1	4	8	20	12	8	2	56
0	0	1	3	8	6	5	1	23
0	1	3	13	24	16	11	2	72
0	0	1	2	3	2	1	0	9
0	0	6	85	117	40	20	4	272
0	0	12	14	38	19	9	1	93
0	0	2	5	8	4	3	1	22
0	1	5	11	14	6	4	1	42
—	—	—	—	—	—	—	—	—
0	0	1	7	12	9	8	2	40
4	11	16	19	19	13	9	2	94
16	22	37	24	20	9	6	1	135
19	15	15	45	43	31	24	7	199
5	**7**	**13**	**26**	**54**	**26**	**17**	**4**	**152**
2	**5**	**37**	**99**	**136**	**99**	**75**	**18**	**471**
360	**25**	**29**	**28**	**46**	**39**	**31**	**9**	**566**
903	**426**	**1,411**	**682**	**351**	**144**	**99**	**50**	**4,066**
0	124	388	402	202	62	14	3	1,196
0	15	238	25	1	0	0	0	279
—	16	273	37	15	2	0	0	343
13	27	36	22	11	3	2	1	114
—	0	1	2	2	0	0	0	5
10	4	5	2	11	38	55	36	162
4	3	3	6	9	6	4	2	37
—	3	16	8	2	1	1	0	31
—	5	55	50	25	1	0	0	137
0	1	53	27	8	0	0	0	90
—	47	75	34	8	4	0	0	168
—	6	161	1	5	1	0	0	174
—	2	6	12	21	6	2	0	48
8	107	36	7	0	0	0	0	158
323	15	10	5	2	0	0	0	355
544	51	56	40	29	21	19	7	767
20	**78**	**277**	**752**	**1,002**	**501**	**213**	**51**	**2,895**
3	20	70	104	111	57	24	7	395
9	39	137	193	236	125	67	19	824
8	20	54	268	365	172	76	20	982
—	—	16	188	290	145	45	6	690
0	0	0	0	0	1	2	1	4
366	**93**	**178**	**315**	**889**	**1,038**	**1,129**	**449**	**4,456**
7	18	37	33	21	8	6	2	132
4	3	9	22	93	123	144	59	458
8	8	54	110	411	500	493	171	1,754
31	25	29	66	191	238	259	100	940
16	7	12	20	30	33	42	19	179
300	33	37	64	142	136	185	98	993
208	**105**	**105**	**122**	**130**	**112**	**114**	**42**	**939**
6	2	6	55	65	60	65	24	284
33	86	70	31	16	5	2	1	242
169	17	29	36	50	47	46	18	413

(Continues on the following page.)

Table 3C.5 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**2,948**	**425**	**65**	**132**	**119**	**342**	**226**	**149**	**34**	**1,492**
1. Peptic ulcer disease	100	1	1	9	11	17	10	9	3	61
2. Cirrhosis of the liver	686	17	10	24	26	134	95	52	10	368
3. Appendicitis	11	0	1	2	1	1	0	1	0	6
Other digestive diseases	2,152	406	52	97	81	190	121	87	22	1,057
J. Genitourinary diseases	**1,283**	**91**	**24**	**46**	**55**	**258**	**119**	**94**	**29**	**717**
1. Nephritis and nephrosis	634	15	17	31	33	86	82	57	15	335
2. Benign prostatic hypertrophy	156	—	—	—	—	134	10	8	4	156
Other genitourinary system diseases	493	76	7	16	22	39	28	28	11	226
K. Skin diseases	**234**	**36**	**15**	**18**	**13**	**10**	**7**	**7**	**2**	**109**
L. Musculoskeletal diseases	**1,080**	**16**	**29**	**76**	**164**	**129**	**45**	**21**	**4**	**484**
1. Rheumatoid arthritis	185	1	6	14	12	13	6	3	1	55
2. Osteoarthritis	517	0	0	16	73	64	26	12	2	193
3. Gout	122	0	0	7	60	34	5	2	0	108
4. Low back pain	101	5	12	12	11	9	3	1	0	53
Other musculoskeletal disorders	155	10	11	26	9	9	5	4	1	75
M. Congenital anomalies	**2,026**	**1,006**	**32**	**19**	**6**	**3**	**2**	**1**	**0**	**1,068**
1. Abdominal wall defect	14	7	0	0	0	0	0	0	0	7
2. Anencephaly	47	20	0	0	0	0	0	0	0	21
3. Anorectal atresia	5	3	0	0	0	0	0	0	0	3
4. Cleft lip	5	3	0	0	0	0	0	0	0	3
5. Cleft palate	9	5	0	0	0	0	0	0	0	5
6. Esophageal atresia	6	1	0	0	0	0	0	0	0	1
7. Renal agenesis	13	8	0	0	0	0	0	0	0	8
8. Down syndrome	306	157	1	1	0	0	0	0	0	160
9. Congenital heart anomalies	964	477	14	9	3	1	1	1	0	506
10. Spina bifida	104	45	4	2	0	0	0	0	—	51
Other congenital anomalies	551	281	12	6	2	1	1	0	0	302
N. Oral conditions	**721**	**91**	**54**	**73**	**32**	**69**	**31**	**9**	**1**	**361**
1. Dental caries	463	90	54	38	11	23	11	6	1	235
2. Periodontal disease	9	—	—	2	2	0	0	0	0	4
3. Edentulism	241	—	—	34	18	45	20	3	0	119
Other oral diseases	7	1	0	0	0	0	0	0	0	3
III. Injuries	***8,971***	***721***	***1,098***	***2,175***	***1,104***	***615***	***209***	***102***	***20***	***6,044***
A. Unintentional injuries	**7,854**	**704**	**1,062**	**1,752**	**864**	**531**	**185**	**95**	**18**	**5,211**
1. Road traffic accidents	3,002	183	348	744	455	277	97	51	8	2,162
2. Poisonings	184	20	5	42	20	32	5	2	0	125
3. Falls	915	86	140	156	68	44	16	12	3	525
4. Fires	564	64	43	71	33	19	5	3	1	238
5. Drownings	378	55	67	126	27	15	4	2	0	296
6. Other unintentional injuries	2,810	296	460	613	262	144	59	26	6	1,865
B. Intentional injuries	**1,117**	**17**	**36**	**423**	**240**	**84**	**25**	**7**	**2**	**833**
1. Self-inflicted injuries	364	3	8	107	57	26	9	3	1	213
2. Violence	440	8	23	194	86	31	8	2	1	353
3. War	272	5	4	106	87	23	6	1	1	233
Other intentional injuries	41	2	2	15	11	4	1	0	0	35

Table 3C.5 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
364	**53**	**129**	**131**	**324**	**229**	**174**	**54**	**1,456**
0	1	5	7	9	7	7	3	39
15	8	16	26	112	76	51	13	317
0	1	1	1	0	0	0	0	5
348	43	106	98	202	145	115	37	1,095
58	**25**	**51**	**64**	**140**	**106**	**89**	**34**	**566**
11	16	23	30	85	66	52	16	299
—	—	—	—	—	—	—	—	—
47	9	28	34	55	40	37	17	267
24	**10**	**18**	**15**	**16**	**13**	**13**	**16**	**125**
19	**41**	**94**	**163**	**159**	**81**	**34**	**6**	**596**
7	16	27	31	30	11	5	1	130
0	1	38	100	104	58	21	3	325
0	0	1	7	3	1	1	0	13
3	15	9	11	8	2	1	0	48
9	9	18	14	14	8	6	2	80
898	**33**	**15**	**7**	**2**	**1**	**1**	**0**	**958**
6	0	0	0	0	0	—	0	7
24	1	1	0	0	0	—	0	26
2	0	0	0	0	0	—	0	2
2	0	0	0	0	0	—	0	3
4	0	0	0	0	0	—	0	4
5	0	0	0	0	0	—	0	5
5	0	0	0	0	0	—	0	5
144	2	0	0	0	0	—	0	146
429	14	8	4	1	1	1	0	458
48	3	2	0	—	0	0	—	53
228	12	5	2	1	1	0	0	249
87	**52**	**72**	**31**	**70**	**34**	**11**	**2**	**359**
86	52	36	11	23	12	6	2	228
—	—	2	2	0	0	0	0	4
—	—	33	17	46	22	4	0	122
1	0	1	1	0	0	0	0	5
510	***709***	***878***	***412***	***229***	***98***	***72***	***19***	***2,928***
503	**673**	**733**	**356**	**203**	**89**	**68**	**18**	**2,643**
140	223	196	129	82	37	27	5	840
11	4	21	13	5	3	2	1	59
96	130	89	29	19	10	13	5	390
57	56	128	43	27	6	7	2	326
35	19	18	6	3	2	1	0	83
165	241	282	136	68	31	19	5	946
7	**35**	**145**	**57**	**26**	**9**	**4**	**1**	**284**
0	8	96	30	11	4	2	0	151
5	8	40	20	8	3	1	1	88
0	19	6	6	7	2	1	0	40
1	1	2	1	0	0	0	0	5

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.6 DALYs(3,0) by Cause, Sex, and Age in the South Asia Region, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*1,388*	*88*	*164*	*195*	*139*	*81*	*30*	*14*	*4*	*715*
All causes	**408,655**	**71,133**	**13,630**	**25,697**	**27,281**	**30,913**	**19,697**	**12,168**	**3,233**	**203,753**
I. Communicable, maternal, perinatal, and nutritional conditions	***181,180***	***56,837***	***5,771***	***6,612***	***8,602***	***5,776***	***2,890***	***1,913***	***523***	***88,924***
A. Infectious and parasitic diseases	**87,705**	**20,242**	**4,416**	**5,937**	**7,938**	**5,060**	**1,692**	**882**	**221**	**46,388**
1. **Tuberculosis**	**13,875**	**194**	**228**	**1,575**	**2,626**	**2,439**	**1,014**	**324**	**34**	**8,435**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**3,670**	**581**	**8**	**276**	**146**	**131**	**89**	**43**	**12**	**1,286**
a. Syphilis	1,490	369	0	20	12	79	89	43	12	625
b. Chlamydia	997	12	2	67	12	0	0	—	—	94
c. Gonorrhea	1,079	199	5	190	108	2	0	—	—	504
d. Other sexually transmitted diseases	105	0	0	0	14	49	0	0	0	64
3. **HIV/AIDS**	**7,413**	**226**	**56**	**1,422**	**2,953**	**840**	**50**	**6**	**0**	**5,553**
4. **Diarrheal diseases**	**22,257**	**10,821**	**184**	**134**	**139**	**124**	**80**	**67**	**44**	**11,592**
5. **Childhood-cluster diseases**	**14,566**	**5,389**	**1,233**	**311**	**149**	**67**	**18**	**6**	**3**	**7,175**
a. Pertussis	3,930	1,934	15	—	—	—	—	—	—	1,949
b. Poliomyelitis	55	6	3	11	7	1	—	—	—	28
c. Diphtheria	90	32	6	1	0	1	0	0	—	40
d. Measles	6,527	2,163	924	110	—	—	—	—	—	3,197
e. Tetanus	3,965	1,254	286	189	142	65	18	6	3	1,961
6. **Meningitis**	**2,142**	**274**	**285**	**177**	**101**	**100**	**39**	**34**	**9**	**1,019**
7. **Hepatitis B**[a]	**585**	**2**	**2**	**90**	**107**	**137**	**27**	**18**	**5**	**387**
Hepatitis C[a]	**228**	**1**	**1**	**34**	**41**	**54**	**11**	**7**	**2**	**149**
8. **Malaria**	**2,603**	**950**	**132**	**68**	**52**	**32**	**13**	**7**	**3**	**1,258**
9. **Tropical-cluster diseases**	**3,721**	**112**	**801**	**877**	**521**	**167**	**22**	**7**	**1**	**2,509**
a. Trypanosomiasis	0	—	—	—	0	—	—	—	—	0
b. Chagas' disease	0	—	—	—	—	—	—	—	0	0
c. Schistosomiasis	3	—	0	1	1	0	0	0	0	2
d. Leishmaniasis	1,306	43	273	211	123	54	15	4	0	724
e. Lymphatic filariasis	2,412	69	528	666	397	113	7	2	0	1,782
f. Onchocerciasis	—	—	—	—	—	—	—	—	—	—
10. **Leprosy**	**113**	**6**	**14**	**10**	**16**	**13**	**3**	**2**	**1**	**64**
11. **Dengue**	**240**	**25**	**73**	**4**	**4**	**3**	**1**	**1**	**0**	**111**
12. **Japanese encephalitis**	**298**	**16**	**19**	**30**	**53**	**8**	**2**	**2**	**0**	**130**
13. **Trachoma**	**197**	**1**	**0**	**3**	**13**	**18**	**13**	**6**	**2**	**55**
14. **Intestinal nematode infections**	**548**	**41**	**233**	**1**	**0**	**1**	**0**	**0**	**0**	**277**
a. Ascariasis	283	22	118	0	0	0	—	0	—	140
b. Trichuriasis	122	6	60	—	—	—	—	—	—	66
c. Hookworm disease	127	12	53	—	0	—	—	0	0	65
Other intestinal infections	16	2	2	0	0	1	0	0	0	6
Other infectious diseases	15,249	1,601	1,147	926	1,020	927	310	352	105	6,388
B. Respiratory infections	**35,044**	**13,238**	**774**	**274**	**285**	**348**	**1,136**	**975**	**285**	**17,316**
1. Lower respiratory infections	34,196	13,112	621	259	270	334	1,107	949	278	16,929
2. Upper respiratory infections	428	53	16	14	14	14	29	26	7	173
3. Otitis media	421	73	137	2	1	1	0	0	0	214
C. Maternal conditions	**10,069**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	1,718	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	1,857	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	742	—	—	—	—	—	—	—	—	—
4. Obstructed labor	1,185	—	—	—	—	—	—	—	—	—
5. Abortion	1,467	—	—	—	—	—	—	—	—	—
Other maternal conditions	3,100	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**37,721**	**20,442**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**20,442**
1. Low birthweight	25,015	13,292	—	—	—	—	—	—	—	13,292
2. Birth asphyxia and birth trauma	8,283	4,957	—	—	—	—	—	—	—	4,957
Other perinatal conditions	4,423	2,193	—	—	—	—	—	—	—	2,193
E. Nutritional deficiencies	**10,640**	**2,915**	**580**	**400**	**380**	**368**	**62**	**56**	**16**	**4,777**
1. Protein-energy malnutrition	5,695	2,319	334	66	10	22	3	3	1	2,759
2. Iodine deficiency	490	168	71	0	0	0	0	0	0	239
3. Vitamin A deficiency	146	23	46	0	—	0	—	—	—	70
4. Iron-deficiency anemia	3,616	330	106	318	346	294	31	15	4	1,443
Other nutritional disorders	693	75	22	16	24	52	28	38	11	267

Table 3C.6 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
83	*154*	*180*	*128*	*77*	*31*	*16*	*4*	*673*
72,151	**15,087**	**30,361**	**24,094**	**25,792**	**19,349**	**14,059**	**4,009**	**204,902**
56,809	***6,543***	***11,886***	***7,825***	***3,777***	***2,688***	***2,088***	***638***	***92,256***
22,702	**4,846**	**4,800**	**3,721**	**2,812**	**1,301**	**878**	**257**	**41,317**
175	**268**	**1,479**	**1,664**	**1,161**	**480**	**191**	**23**	**5,440**
979	**26**	**904**	**275**	**124**	**53**	**19**	**4**	**2,384**
778	1	22	14	0	27	19	3	865
12	19	631	127	98	15	—	—	903
189	7	249	128	2	0	—	—	575
0	0	1	6	23	10	0	0	41
217	**54**	**719**	**686**	**174**	**10**	**1**	**0**	**1,860**
10,007	**174**	**98**	**77**	**93**	**85**	**75**	**56**	**10,665**
5,557	**1,259**	**323**	**153**	**70**	**20**	**7**	**3**	**7,391**
1,966	15	—	—	—	—	—	—	1,981
6	3	10	7	1	—	—	—	27
37	13	0	0	—	—	—	0	50
2,276	938	116	—	—	—	—	—	3,330
1,272	290	196	146	69	20	7	3	2,004
527	**348**	**122**	**38**	**32**	**31**	**19**	**6**	**1,123**
4	**16**	**67**	**36**	**47**	**16**	**10**	**3**	**198**
2	**7**	**27**	**14**	**19**	**6**	**4**	**1**	**79**
1,042	**127**	**66**	**50**	**34**	**15**	**8**	**3**	**1,345**
127	**416**	**302**	**129**	**203**	**27**	**8**	**1**	**1,212**
—	—	—	—	—	—	—	—	—
—	—	—	—	0	—	—	—	0
—	0	0	0	0	0	0	0	1
97	249	151	38	28	16	3	0	581
30	167	151	92	174	11	4	1	630
—	—	—	—	—	—	—	—	—
9	**13**	**9**	**8**	**7**	**2**	**2**	**0**	**49**
23	**92**	**4**	**4**	**3**	**1**	**1**	**0**	**129**
77	**52**	**19**	**11**	**5**	**3**	**1**	**0**	**168**
0	**1**	**7**	**37**	**40**	**32**	**20**	**5**	**142**
57	**212**	**1**	**0**	**0**	**0**	**0**	**0**	**271**
34	109	0	0	—	0	—	—	143
6	50	—	—	—	—	0	—	56
11	50	0	—	—	—	—	—	62
7	2	0	0	0	0	0	0	10
3,899	1,782	655	539	801	522	513	150	8,861
13,535	**937**	**241**	**124**	**270**	**1,160**	**1,106**	**356**	**17,728**
13,307	787	231	116	260	1,130	1,086	350	17,267
153	19	10	8	10	29	20	6	255
75	131	0	0	0	1	—	0	206
—	**67**	**6,461**	**3,474**	**67**	**—**	**—**	**—**	**10,069**
—	—	847	839	32	—	—	—	1,718
—	—	1,360	497	1	—	—	—	1,857
—	—	451	284	7	—	—	—	742
—	—	803	381	2	—	—	—	1,185
—	67	1,070	330	0	—	—	—	1,467
—	—	1,931	1,144	26	—	—	—	3,100
17,279	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**17,279**
11,723	—	—	—	—	—	—	—	11,723
3,326	—	—	—	—	—	—	—	3,326
2,230	—	—	—	—	—	—	—	2,230
3,293	**693**	**384**	**507**	**628**	**228**	**104**	**25**	**5,863**
2,441	403	15	23	40	12	3	1	2,937
198	52	0	0	0	0	0	0	251
46	30	—	—	0	—	0	0	77
374	175	363	479	558	182	36	6	2,172
234	32	6	6	31	34	64	19	426

(Continues on the following page.)

Table 3C.6 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***181,339***	***12,192***	***3,875***	***10,614***	***12,752***	***22,030***	***15,881***	***9,726***	***2,553***	***89,623***
A. Malignant neoplasms	**14,127**	**185**	**196**	**487**	**811**	**1,797**	**2,123**	**1,028**	**261**	**6,887**
1. Mouth and oropharynx cancers	2,020	2	7	63	161	400	489	189	42	1,353
2. Esophageal cancer	1,116	1	1	9	63	174	242	93	19	602
3. Stomach cancer	629	0	2	16	53	114	131	60	17	393
4. Colon and rectal cancers	499	0	1	26	61	69	81	41	14	292
5. Liver cancer	464	5	3	30	52	83	65	28	6	272
6. Pancreas cancer	176	0	0	1	12	32	36	16	4	102
7. Trachea, bronchus, and lung cancers	1,807	0	1	19	110	494	515	256	45	1,441
8. Melanoma and other skin cancers	41	1	1	3	3	5	5	3	1	21
9. Breast cancer	1,246	—	—	0	0	0	0	0	0	0
10. Cervix uteri cancer	1,423	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	66	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	327	—	—	—	—	—	—	—	—	—
13. Prostate cancer	210	0	0	0	2	20	79	85	24	210
14. Bladder cancer	408	0	0	1	6	28	72	52	19	178
15. Lymphomas and multiple myeloma	1,401	19	55	96	101	87	91	46	13	507
16. Leukemia	851	62	80	171	66	44	38	18	5	484
Other malignant neoplasms	1,444	94	46	52	123	248	280	141	50	1,033
B. Other neoplasms	**350**	**19**	**18**	**56**	**29**	**33**	**16**	**10**	**4**	**185**
C. Diabetes mellitus	**4,433**	**26**	**37**	**190**	**392**	**750**	**464**	**290**	**94**	**2,243**
D. Endocrine disorders	**828**	**257**	**21**	**35**	**31**	**34**	**20**	**13**	**4**	**415**
E. Neuropsychiatric conditions	**37,734**	**2,909**	**1,794**	**5,854**	**3,294**	**1,746**	**603**	**713**	**260**	**17,173**
1. Unipolar depressive disorders	14,582	—	834	1,997	1,633	918	266	49	10	5,706
2. Bipolar affective disorder	2,237	0	78	970	110	3	1	—	—	1,163
3. Schizophrenia	2,896	—	208	954	158	80	14	7	2	1,423
4. Epilepsy	1,741	257	229	211	88	40	16	11	3	854
5. Alcohol use disorders	1,202	—	15	363	533	189	43	9	2	1,153
6. Alzheimer's and other dementias	1,955	43	17	17	2	41	85	437	185	828
7. Parkinson's disease	303	0	0	0	19	43	26	39	10	138
8. Multiple sclerosis	227	0	14	48	30	8	3	1	0	105
9. Drug use disorders	957	—	23	285	347	148	7	1	0	812
10. Post-traumatic stress disorder	548	—	7	76	45	21	0	0	0	149
11. Obsessive-compulsive disorder	649	—	11	168	75	15	3	1	0	273
12. Panic disorder	1,081	—	21	336	4	13	2	1	0	377
13. Insomnia (primary)	747	—	8	105	125	68	35	7	2	349
14. Migraine	1,452	3	196	183	25	2	0	0	0	408
15. Mental retardation, lead-caused	1,955	992	1	2	1	0	0	0	0	997
Other neuropsychiatric disorders	5,202	1,614	133	137	100	157	101	149	46	2,437
F. Sense organ diseases	**19,602**	**4**	**11**	**278**	**2,430**	**3,489**	**1,673**	**655**	**135**	**8,675**
1. Glaucoma	203	3	5	7	12	27	19	8	2	84
2. Cataracts	9,478	0	4	143	900	1,574	810	375	91	3,898
3. Vision disorders, age-related	1,600	0	0	14	128	281	151	67	16	657
4. Hearing loss, adult onset	8,305	—	—	113	1,388	1,606	693	203	26	4,030
Other sense organ disorders	16	1	1	1	1	1	1	1	0	7
G. Cardiovascular diseases	**51,264**	**704**	**392**	**1,288**	**2,434**	**7,821**	**7,517**	**5,149**	**1,325**	**26,629**
1. Rheumatic heart disease	2,635	179	79	276	182	259	144	91	23	1,233
2. Hypertensive heart disease	1,460	11	10	41	87	210	195	147	47	749
3. Ischemic heart disease	25,877	66	114	405	1,314	4,819	4,172	2,723	674	14,287
4. Cerebrovascular disease	13,184	80	35	110	284	1,764	2,346	1,648	397	6,663
5. Inflammatory heart diseases	1,591	102	31	142	150	149	129	94	25	822
Other cardiovascular diseases	6,517	266	122	315	417	620	531	446	158	2,875
H. Respiratory diseases	**16,590**	**968**	**517**	**687**	**943**	**2,568**	**1,858**	**1,054**	**241**	**8,836**
1. Chronic obstructive pulmonary disease	9,416	2	1	2	449	1,972	1,589	848	182	5,045
2. Asthma	3,593	200	383	569	314	304	52	27	6	1,855
Other respiratory diseases	3,581	766	133	116	180	291	217	179	54	1,936

Table 3C.6 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
12,653	***4,468***	***11,756***	***12,784***	***19,735***	***15,734***	***11,378***	***3,207***	***91,715***
218	**193**	**540**	**947**	**2,214**	**1,837**	**938**	**353**	**7,239**
6	3	18	56	214	209	115	46	667
1	1	12	49	169	164	85	33	515
0	0	11	28	71	69	38	19	236
0	1	8	36	54	57	33	18	207
7	7	43	28	51	32	19	6	192
0	0	2	10	24	20	13	6	74
0	1	8	44	131	113	59	9	366
1	1	1	2	5	6	3	1	20
0	0	18	247	472	315	139	54	1,246
0	1	175	129	534	397	148	40	1,423
2	2	1	7	16	19	13	6	66
1	6	26	44	99	87	49	16	327
—	—	—	—	—	—	—	—	—
20	6	10	54	49	46	30	15	230
55	82	105	128	179	187	116	41	893
83	63	92	46	36	25	14	7	367
43	18	10	38	109	92	64	37	410
15	**14**	**22**	**38**	**40**	**19**	**13**	**6**	**165**
44	**40**	**141**	**358**	**657**	**545**	**331**	**73**	**2,190**
248	**22**	**25**	**23**	**39**	**30**	**20**	**6**	**414**
3,267	**2,059**	**6,882**	**3,947**	**2,113**	**991**	**925**	**376**	**20,561**
—	778	3,194	2,753	1,502	521	106	23	8,876
0	64	902	104	3	1	0	0	1,075
1	34	1,076	215	107	23	14	4	1,473
210	255	240	83	61	21	14	3	887
—	6	13	12	10	6	2	1	49
40	17	17	6	48	185	538	276	1,127
0	—	0	22	54	37	42	10	165
1	13	59	37	9	2	1	0	121
—	7	37	65	33	2	1	0	145
—	5	209	119	61	2	1	0	398
—	7	171	137	51	8	2	0	376
—	19	647	6	26	3	2	0	703
—	7	115	128	82	45	18	2	398
70	752	57	163	3	0	0	0	1,044
953	2	2	0	0	0	0	0	957
1,993	93	145	96	62	136	183	57	2,765
2	**2**	**200**	**2,950**	**4,221**	**2,321**	**1,002**	**230**	**10,926**
—	0	5	23	42	30	15	4	119
0	1	157	1,208	2,242	1,207	606	159	5,580
0	0	18	153	379	253	112	28	943
—	—	18	1,565	1,558	829	267	39	4,275
1	1	2	1	1	1	2	0	9
769	**447**	**1,433**	**1,762**	**5,206**	**7,157**	**6,238**	**1,623**	**24,635**
199	139	261	198	274	169	127	35	1,402
12	16	26	54	188	197	159	59	712
49	77	610	922	2,670	3,690	2,887	684	11,590
59	44	65	178	1,261	2,301	2,072	540	6,521
90	36	107	97	138	126	135	40	769
359	136	364	312	676	674	857	265	3,642
890	**528**	**603**	**749**	**2,414**	**1,239**	**1,052**	**279**	**7,755**
3	0	2	348	1,904	1,022	870	223	4,372
163	427	480	278	306	48	28	8	1,737
725	101	121	124	204	169	154	49	1,646

(Continues on the following page.)

Table 3C.6 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**16,010**	**2,597**	**389**	**838**	**1,126**	**1,809**	**778**	**426**	**133**	**8,096**
1. Peptic ulcer disease	1,901	54	48	196	270	389	129	76	19	1,182
2. Cirrhosis of the liver	4,249	192	110	239	364	761	339	165	35	2,205
3. Appendicitis	113	1	4	8	7	19	10	8	3	60
Other digestive diseases	9,747	2,349	227	396	484	640	300	176	76	4,649
J. Genitourinary diseases	**3,991**	**328**	**114**	**186**	**285**	**946**	**326**	**210**	**56**	**2,452**
1. Nephritis and nephrosis	2,387	133	106	165	236	331	199	132	34	1,334
2. Benign prostatic hypertrophy	692	—	—	—	7	546	80	47	12	692
Other genitourinary system diseases	913	195	9	21	43	69	47	32	11	426
K. Skin diseases	**896**	**199**	**78**	**73**	**53**	**55**	**24**	**15**	**5**	**502**
L. Musculoskeletal diseases	**5,586**	**77**	**129**	**373**	**850**	**778**	**289**	**117**	**26**	**2,639**
1. Rheumatoid arthritis	848	5	27	56	54	69	31	15	3	261
2. Osteoarthritis	2,577	—	0	111	297	349	164	52	8	981
3. Gout	841	—	—	42	405	254	40	10	1	752
4. Low back pain	453	22	51	51	51	46	14	5	1	241
Other musculoskeletal disorders	868	49	51	112	44	60	40	34	13	403
M. Congenital anomalies	**8,101**	**3,771**	**73**	**128**	**7**	**3**	**1**	**1**	**0**	**3,984**
1. Abdominal wall defect	18	8	—	—	—	—	—	—	—	8
2. Anencephaly	322	153	—	—	—	—	—	—	—	153
3. Anorectal atresia	2	1	—	—	—	—	—	—	—	1
4. Cleft lip	24	13	—	—	—	—	—	—	—	13
5. Cleft palate	41	20	—	0	0	—	—	—	—	21
6. Esophageal atresia	7	3	—	—	—	—	—	—	—	3
7. Renal agenesis	18	9	0	—	—	—	0	—	—	9
8. Down syndrome	1,753	838	21	46	—	—	—	—	—	905
9. Congenital heart anomalies	4,881	2,223	43	76	4	1	1	1	0	2,348
10. Spina bifida	588	281	1	0	0	0	0	0	—	283
Other congenital anomalies	449	222	8	6	3	2	1	1	0	241
N. Oral conditions	**1,824**	**149**	**107**	**141**	**68**	**200**	**187**	**46**	**8**	**907**
1. Dental caries	1,189	144	107	126	46	93	58	27	7	607
2. Periodontal disease	84	—	—	11	20	8	3	1	0	43
3. Edentulism	518	—	—	1	1	99	126	16	1	244
Other oral diseases	32	6	1	3	2	1	0	1	0	12
III. Injuries	***46,136***	***2,103***	***3,984***	***8,472***	***5,926***	***3,107***	***926***	***529***	***157***	***25,205***
A. Unintentional injuries	**36,774**	**2,003**	**3,717**	**5,865**	**4,192**	**2,432**	**772**	**438**	**127**	**19,545**
1. Road traffic accidents	7,424	266	691	1,624	1,511	796	174	91	23	5,176
2. Poisonings	1,844	24	100	224	182	331	92	25	6	985
3. Falls	4,907	421	680	644	358	238	152	152	54	2,697
4. Fires	5,905	272	264	528	433	162	38	19	5	1,722
5. Drownings	2,256	149	349	456	215	117	36	23	6	1,351
6. Other unintentional injuries	14,439	872	1,633	2,389	1,492	788	280	127	33	7,613
B. Intentional injuries	**9,362**	**100**	**267**	**2,607**	**1,734**	**674**	**154**	**92**	**31**	**5,660**
1. Self-inflicted injuries	6,015	—	109	1,564	956	404	86	53	13	3,183
2. Violence	2,376	44	140	665	474	195	43	31	15	1,607
3. War	819	43	8	337	275	65	19	4	1	754
Other intentional injuries	152	13	10	41	29	11	7	4	1	116

Table 3C.6 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
2,717	**682**	**1,081**	**923**	**1,305**	**638**	**424**	**143**	**7,914**
60	36	93	148	205	90	68	18	719
513	247	319	241	397	179	120	27	2,043
1	4	5	4	14	12	10	3	53
2,143	395	664	529	690	357	226	94	5,098
224	**94**	**151**	**217**	**372**	**256**	**175**	**51**	**1,539**
118	88	131	110	263	181	128	34	1,053
—	—	—	—	—	—	—	—	—
106	7	19	107	109	74	47	17	486
132	**47**	**58**	**55**	**48**	**28**	**20**	**7**	**395**
68	**163**	**371**	**747**	**907**	**467**	**175**	**48**	**2,946**
3	57	116	145	165	66	31	5	587
0	1	138	446	597	318	82	13	1,595
—	—	6	45	24	9	5	1	89
11	61	34	50	38	12	4	1	212
54	45	77	62	83	62	53	28	464
3,917	**75**	**116**	**4**	**4**	**1**	**1**	**0**	**4,118**
9	—	—	—	—	—	—	—	9
169	—	—	—	—	0	—	—	169
1	—	—	—	—	—	—	—	1
11	—	—	—	—	—	—	—	11
20	—	—	—	0	—	—	—	20
3	—	—	—	—	—	—	—	3
9	0	—	—	—	0	—	—	9
784	21	43	—	—	—	—	—	848
2,417	45	67	2	1	1	1	0	2,533
303	1	0	0	0	—	0	0	305
190	8	6	2	2	0	0	0	208
141	**101**	**134**	**65**	**195**	**205**	**65**	**11**	**917**
136	100	117	42	89	61	30	8	582
—	0	10	18	8	3	2	0	41
—	—	1	1	98	140	33	2	274
5	2	6	4	1	1	0	0	20
2,689	***4,076***	***6,718***	***3,484***	***2,280***	***928***	***592***	***163***	***20,931***
2,624	**3,770**	**4,782**	**2,733**	**1,824**	**819**	**527**	**150**	**17,229**
331	586	456	353	358	94	55	15	2,248
30	111	152	139	189	189	39	11	858
427	677	374	190	191	124	181	46	2,209
538	693	1,595	868	316	95	60	17	4,182
194	266	224	98	59	33	24	7	905
1,104	1,438	1,982	1,084	711	285	168	55	6,826
65	**306**	**1,937**	**751**	**455**	**109**	**65**	**13**	**3,702**
0	196	1,697	549	300	45	35	10	2,832
55	96	218	181	133	56	28	2	769
1	8	14	18	17	5	2	1	65
9	6	7	4	5	3	1	0	36

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.7 DALYs(3,0) by Cause, Sex, and Age in the Sub-Saharan Africa Region, 2001 (*thousands*)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*668*	*57*	*92*	*93*	*49*	*26*	*9*	*4*	*1*	*331*
All causes	**344,754**	**84,575**	**13,040**	**23,098**	**26,058**	**16,033**	**7,197**	**4,076**	**1,064**	**175,141**
I. Communicable, maternal, perinatal, and nutritional conditions	***242,837***	***74,911***	***7,172***	***10,377***	***16,077***	***7,005***	***2,046***	***752***	***154***	***118,494***
A. Infectious and parasitic diseases	**173,484**	**46,407**	**5,827**	**9,866**	**15,439**	**6,331**	**1,563**	**495**	**99**	**86,027**
1. **Tuberculosis**	**8,084**	**397**	**241**	**1,489**	**1,792**	**1,038**	**285**	**91**	**18**	**5,350**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**3,842**	**775**	**6**	**238**	**285**	**336**	**38**	**0**	**0**	**1,679**
a. Syphilis	2,347	560	1	63	235	327	37	0	0	1,223
b. Chlamydia	559	12	1	34	5	0	0	—	—	52
c. Gonorrhea	894	191	4	141	40	3	0	—	—	379
d. Other sexually transmitted diseases	41	12	0	1	5	6	1	0	0	24
3. **HIV/AIDS**	**56,820**	**4,894**	**1,452**	**6,047**	**11,262**	**2,995**	**325**	**29**	**0**	**27,005**
4. **Diarrheal diseases**	**22,046**	**10,797**	**160**	**93**	**127**	**130**	**88**	**71**	**39**	**11,506**
5. **Childhood-cluster diseases**	**23,198**	**9,709**	**1,502**	**213**	**86**	**41**	**11**	**4**	**1**	**11,568**
a. Pertussis	6,116	3,031	15	—	—	—	—	—	—	3,047
b. Poliomyelitis	17	8	—	—	—	—	—	—	—	8
c. Diphtheria	45	26	0	0	—	—	—	—	—	26
d. Measles	13,539	5,354	1,312	85	—	—	—	—	—	6,752
e. Tetanus	3,481	1,289	174	128	86	41	11	4	1	1,735
6. **Meningitis**	**941**	**261**	**85**	**35**	**43**	**32**	**8**	**3**	**0**	**469**
7. **Hepatitis B**[a]	**536**	**43**	**95**	**25**	**77**	**41**	**16**	**3**	**0**	**301**
Hepatitis C[a]	**217**	**17**	**40**	**10**	**32**	**17**	**7**	**1**	**0**	**124**
8. **Malaria**	**35,447**	**15,487**	**287**	**338**	**294**	**220**	**102**	**58**	**15**	**16,801**
9. **Tropical-cluster diseases**	**4,897**	**215**	**1,019**	**1,003**	**594**	**350**	**64**	**26**	**5**	**3,277**
a. Trypanosomiasis	1,310	66	318	185	146	102	9	3	0	830
b. Chagas' disease	—	—	—	—	—	—	—	—	—	—
c. Schistosomiasis	1,184	82	253	175	106	51	22	10	2	701
d. Leishmaniasis	312	29	85	70	31	5	2	1	0	223
e. Lymphatic filariasis	1,656	31	343	537	241	108	6	2	0	1,269
f. Onchocerciasis	436	7	20	36	70	83	25	10	3	255
10. **Leprosy**	**24**	**0**	**2**	**1**	**1**	**9**	**0**	**1**	**—**	**14**
11. **Dengue**	**4**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**
12. **Japanese encephalitis**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
13. **Trachoma**	**1,455**	**0**	**1**	**15**	**84**	**116**	**83**	**48**	**11**	**357**
14. **Intestinal nematode infections**	**905**	**80**	**343**	**10**	**5**	**7**	**4**	**2**	**0**	**452**
a. Ascariasis	476	45	191	0	0	0	0	0	0	235
b. Trichuriasis	119	10	45	1	1	1	1	0	0	58
c. Hookworm disease	309	26	107	8	5	6	4	1	0	158
Other intestinal infections	1	—	0	0	0	0	0	0	0	1
Other infectious diseases	15,068	3,731	592	348	756	1,000	530	158	7	7,123
B. Respiratory infections	**31,107**	**13,774**	**971**	**320**	**533**	**590**	**399**	**212**	**46**	**16,846**
1. Lower respiratory infections	30,455	13,619	845	310	514	586	389	208	46	16,517
2. Upper respiratory infections	371	105	31	8	11	4	11	4	0	173
3. Otitis media	281	50	96	3	7	—	0	—	—	156
C. Maternal conditions	**9,743**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	1,643	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	1,843	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	842	—	—	—	—	—	—	—	—	—
4. Obstructed labor	919	—	—	—	—	—	—	—	—	—
5. Abortion	1,557	—	—	—	—	—	—	—	—	—
Other maternal conditions	2,940	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**20,047**	**11,351**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**11,351**
1. Low birthweight	7,891	4,501	—	—	—	—	—	—	—	4,501
2. Birth asphyxia and birth trauma	9,256	5,195	—	—	—	—	—	—	—	5,195
Other perinatal conditions	2,899	1,655	—	—	—	—	—	—	—	1,655
E. Nutritional deficiencies	**8,455**	**3,378**	**373**	**191**	**105**	**84**	**84**	**46**	**9**	**4,271**
1. Protein-energy malnutrition	5,220	2,496	53	8	11	46	62	38	8	2,722
2. Iodine deficiency	951	383	100	0	1	1	1	0	0	487
3. Vitamin A deficiency	548	206	20	2	5	9	5	1	0	249
4. Iron-deficiency anemia	1,688	273	199	180	88	27	16	6	1	789
Other nutritional disorders	49	20	1	0	0	1	1	0	0	24

Table 3C.7 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
56	*91*	*93*	*51*	*28*	*11*	*5*	*1*	*336*
76,795	**12,562**	**29,616**	**22,752**	**13,624**	**7,514**	**5,165**	**1,585**	**169,613**
68,898	***8,056***	***22,639***	***16,570***	***5,500***	***1,586***	***866***	***228***	***124,343***
46,986	**6,290**	**15,133**	**12,539**	**4,531**	**1,219**	**605**	**154**	**87,458**
358	**233**	**945**	**715**	**290**	**142**	**45**	**7**	**2,734**
602	**21**	**1,001**	**359**	**130**	**32**	**17**	**0**	**2,163**
394	1	355	207	121	30	16	0	1,124
12	14	415	60	5	1	—	—	507
188	7	227	90	2	0	—	—	515
8	0	3	2	2	1	1	0	17
4,748	**1,432**	**11,064**	**9,966**	**2,299**	**266**	**41**	**0**	**29,815**
9,910	**160**	**63**	**69**	**100**	**93**	**89**	**56**	**10,540**
9,702	**1,558**	**220**	**88**	**44**	**13**	**5**	**2**	**11,630**
3,054	15	—	—	—	—	—	—	3,069
9	—	—	—	—	—	—	—	9
19	0	—	—	—	—	—	—	19
5,336	1,363	89	—	—	—	—	—	6,787
1,284	180	131	88	44	13	5	2	1,746
231	**150**	**53**	**15**	**17**	**4**	**2**	**0**	**473**
123	**22**	**42**	**14**	**26**	**6**	**2**	**0**	**235**
48	**9**	**16**	**6**	**10**	**3**	**1**	**0**	**93**
17,133	**304**	**409**	**317**	**267**	**121**	**73**	**21**	**18,646**
151	**487**	**422**	**267**	**230**	**39**	**20**	**5**	**1,620**
37	184	119	77	55	6	2	0	480
—	—	—	—	—	—	—	—	—
55	170	129	74	36	10	8	2	483
10	36	28	12	2	1	0	0	89
42	78	114	54	88	8	2	0	387
7	20	32	50	49	15	7	2	181
0	**2**	**1**	**1**	**1**	**3**	**1**	**0**	**9**
0	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
—	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1	**2**	**27**	**236**	**330**	**278**	**175**	**48**	**1,097**
79	**352**	**7**	**4**	**5**	**4**	**1**	**0**	**453**
44	196	0	0	0	0	0	0	241
10	49	1	0	1	0	0	0	61
25	107	6	3	5	3	1	0	151
—	0	0	0	0	0	0	0	1
3,900	1,556	864	481	781	215	133	13	7,945
9,948	**1,349**	**1,108**	**720**	**550**	**294**	**222**	**69**	**14,261**
9,841	1,159	1,094	716	549	289	221	69	13,938
60	117	9	4	1	5	2	0	198
46	74	5	0	—	—	—	—	125
—	**69**	**6,169**	**3,156**	**350**	**—**	**—**	**—**	**9,743**
—	—	797	734	112	—	—	—	1,643
—	—	1,131	632	80	—	—	—	1,843
—	0	530	280	32	—	—	—	842
—	—	655	253	11	—	—	—	919
—	69	1,281	207	0	—	—	—	1,557
—	0	1,774	1,051	114	—	—	—	2,940
8,696	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**8,696**
3,391	—	—	—	—	—	—	—	3,391
4,062	—	—	—	—	—	—	—	4,062
1,244	—	—	—	—	—	—	—	1,244
3,269	**347**	**229**	**154**	**70**	**72**	**38**	**5**	**4,184**
2,322	40	18	13	19	54	28	4	2,498
365	95	1	0	1	0	0	0	464
238	37	8	4	8	3	1	0	299
323	173	200	137	41	15	8	1	899
20	2	1	0	1	0	0	0	25

(Continues on the following page.)

Table 3C.7 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***73,069***	***7,276***	***1,930***	***5,350***	***5,335***	***7,218***	***4,673***	***3,166***	***880***	***35,829***
A. Malignant neoplasms	**6,281**	**53**	**87**	**174**	**377**	**972**	**780**	**524**	**125**	**3,092**
1. Mouth and oropharynx cancers	284	0	2	8	24	73	54	27	5	193
2. Esophageal cancer	343	0	0	2	21	90	62	31	6	212
3. Stomach cancer	487	1	2	8	32	102	63	41	10	258
4. Colon and rectal cancers	291	0	1	9	29	48	35	27	8	158
5. Liver cancer	762	3	3	29	107	204	112	47	7	512
6. Pancreas cancer	117	0	0	0	5	23	15	7	2	52
7. Trachea, bronchus, and lung cancers	225	0	0	1	13	72	52	19	3	162
8. Melanoma and other skin cancers	118	0	0	3	6	19	15	7	2	53
9. Breast cancer	574	—	—	—	0	0	0	0	0	1
10. Cervix uteri cancer	627	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	41	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	152	—	—	—	—	—	—	—	—	—
13. Prostate cancer	416	0	0	1	2	53	146	170	44	416
14. Bladder cancer	133	0	0	1	5	25	26	23	7	88
15. Lymphomas and multiple myeloma	622	17	51	61	69	85	58	36	9	386
16. Leukemia	245	7	12	32	16	28	16	14	3	128
Other malignant neoplasms	844	24	15	19	48	149	124	73	19	472
B. Other neoplasms	**188**	**16**	**13**	**16**	**12**	**19**	**12**	**6**	**1**	**95**
C. Diabetes mellitus	**1,448**	**4**	**8**	**39**	**100**	**181**	**122**	**75**	**18**	**547**
D. Endocrine disorders	**2,706**	**1,074**	**34**	**61**	**64**	**117**	**42**	**26**	**8**	**1,425**
E. Neuropsychiatric conditions	**15,151**	**1,768**	**802**	**2,970**	**1,122**	**558**	**199**	**129**	**45**	**7,593**
1. Unipolar depressive disorders	3,275	—	306	426	334	169	46	8	1	1,291
2. Bipolar affective disorder	1,204	—	48	524	41	1	0	—	—	615
3. Schizophrenia	1,146	—	28	492	34	2	0	0	0	556
4. Epilepsy	1,373	107	145	228	155	89	36	12	4	777
5. Alcohol use disorders	685	—	10	274	197	97	15	6	1	600
6. Alzheimer's and other dementias	450	29	9	6	5	16	36	65	30	197
7. Parkinson's disease	100	0	0	—	5	15	15	15	4	54
8. Multiple sclerosis	77	—	4	13	9	1	0	0	0	29
9. Drug use disorders	929	—	11	472	165	49	2	0	0	699
10. Post-traumatic stress disorder	224	—	4	35	14	8	0	0	0	61
11. Obsessive-compulsive disorder	619	—	59	145	32	14	3	0	0	254
12. Panic disorder	519	—	11	155	2	5	1	0	0	174
13. Insomnia (primary)	234	—	1	58	41	23	10	3	0	136
14. Migraine	329	18	42	21	10	0	0	0	0	92
15. Mental retardation, lead-caused	1,505	753	0	0	0	0	0	—	—	753
Other neuropsychiatric disorders	2,481	861	122	120	77	68	34	19	4	1,306
F. Sense organ diseases	**8,939**	**15**	**71**	**495**	**1,270**	**1,233**	**569**	**268**	**58**	**3,980**
1. Glaucoma	937	3	10	49	124	140	55	28	7	416
2. Cataracts	5,169	11	57	254	623	746	327	167	39	2,224
3. Vision disorders, age-related	920	1	4	20	116	161	60	28	7	397
4. Hearing loss, adult onset	1,912	—	—	171	407	187	126	46	5	942
Other sense organ disorders	2	0	0	0	0	0	0	0	0	1
G. Cardiovascular diseases	**15,069**	**160**	**108**	**382**	**916**	**1,856**	**1,630**	**1,286**	**401**	**6,738**
1. Rheumatic heart disease	479	20	37	54	24	18	4	5	2	165
2. Hypertensive heart disease	937	1	2	9	42	103	88	68	24	338
3. Ischemic heart disease	4,579	2	13	42	188	772	733	537	112	2,399
4. Cerebrovascular disease	5,125	14	22	100	272	590	541	422	118	2,077
5. Inflammatory heart diseases	945	79	18	71	105	100	59	43	15	490
Other cardiovascular diseases	3,004	43	16	107	284	273	204	212	129	1,268
H. Respiratory diseases	**6,150**	**764**	**351**	**407**	**393**	**633**	**535**	**374**	**102**	**3,559**
1. Chronic obstructive pulmonary disease	1,631	14	6	30	113	296	308	234	62	1,065
2. Asthma	1,925	286	285	263	81	80	47	25	6	1,074
Other respiratory diseases	2,595	464	59	114	199	256	180	115	33	1,420

Table 3C.7 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
6,272	***2,049***	***5,159***	***5,064***	***7,469***	***5,708***	***4,191***	***1,327***	***37,240***
55	**90**	**158**	**450**	**1,081**	**740**	**504**	**110**	**3,189**
1	1	2	10	30	23	20	4	91
0	0	2	12	48	38	26	6	131
0	2	7	29	82	59	39	11	229
0	1	4	24	45	30	22	7	133
3	2	22	51	77	49	39	7	250
0	0	1	8	26	17	10	2	64
0	1	1	7	22	18	11	2	63
0	0	2	7	15	19	18	3	64
0	1	7	104	229	133	81	18	574
0	0	41	64	247	162	98	14	627
0	0	1	6	12	10	10	2	41
0	3	10	26	55	34	20	4	152
—	—	—	—	—	—	—	—	—
0	0	1	5	13	15	9	3	45
17	48	29	31	39	34	30	7	236
7	12	17	13	35	19	12	3	118
26	18	11	54	107	79	59	18	372
5	**17**	**7**	**12**	**24**	**16**	**10**	**2**	**93**
2	**7**	**41**	**100**	**290**	**261**	**168**	**33**	**901**
745	**38**	**84**	**66**	**156**	**107**	**64**	**20**	**1,281**
1,704	**932**	**2,797**	**1,095**	**560**	**236**	**158**	**75**	**7,558**
—	301	711	567	300	87	16	3	1,985
—	14	529	45	2	0	—	—	590
—	8	469	103	5	2	1	0	590
98	147	180	77	58	19	13	4	596
—	6	25	26	19	4	5	0	85
26	8	7	5	18	51	84	55	253
0	—	0	4	14	12	10	6	46
—	7	20	15	5	1	0	0	48
—	9	143	62	16	1	0	0	230
—	3	97	40	22	1	0	0	162
—	197	94	56	10	7	2	0	365
—	13	317	4	10	1	1	0	346
—	5	22	37	20	11	2	1	98
9	121	97	10	0	0	0	0	237
752	0	0	0	0	—	—	—	752
820	94	87	46	61	37	23	5	1,174
5	**22**	**428**	**1,519**	**1,661**	**828**	**398**	**100**	**4,959**
1	3	49	144	187	82	42	12	522
3	17	230	804	1,015	534	271	69	2,944
0	2	29	128	219	89	43	13	522
—	—	119	443	239	122	41	5	970
0	0	0	0	0	0	0	0	1
165	**145**	**458**	**739**	**1,983**	**2,180**	**1,953**	**710**	**8,331**
15	45	96	68	54	22	12	2	314
1	1	9	52	148	166	160	62	599
2	21	23	93	545	738	586	173	2,180
8	27	82	221	825	894	752	239	3,048
53	22	62	74	100	72	53	19	455
86	28	186	231	312	288	391	216	1,736
537	**338**	**365**	**208**	**372**	**358**	**311**	**103**	**2,592**
12	0	15	32	141	157	157	52	566
152	289	218	41	61	47	33	10	851
374	48	132	135	170	154	121	41	1,175

(Continues on the following page.)

Table 3C.7 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**7,226**	**1,139**	**163**	**419**	**592**	**812**	**413**	**244**	**54**	**3,836**
1. Peptic ulcer disease	345	2	2	42	51	57	26	14	5	199
2. Cirrhosis of the liver	1,212	3	4	64	173	278	139	78	12	750
3. Appendicitis	44	0	10	4	5	3	2	1	0	25
Other digestive diseases	5,626	1,134	147	309	363	474	246	151	38	2,863
J. Genitourinary diseases	**2,623**	**230**	**70**	**100**	**124**	**452**	**174**	**142**	**50**	**1,341**
1. Nephritis and nephrosis	1,633	96	59	79	96	129	131	101	35	727
2. Benign prostatic hypertrophy	292	—	—	—	—	263	13	11	5	292
Other genitourinary system diseases	697	134	11	21	28	59	30	30	9	322
K. Skin diseases	**956**	**135**	**51**	**71**	**93**	**63**	**34**	**26**	**9**	**482**
L. Musculoskeletal diseases	**2,171**	**36**	**67**	**160**	**253**	**275**	**116**	**59**	**9**	**975**
1. Rheumatoid arthritis	252	2	7	15	31	23	11	4	1	94
2. Osteoarthritis	1,278	—	1	57	143	194	84	40	5	523
3. Gout	94	—	0	8	41	23	7	3	1	83
4. Low back pain	214	14	28	25	20	18	4	2	0	113
Other musculoskeletal disorders	333	20	31	55	18	18	8	9	3	162
M. Congenital anomalies	**3,441**	**1,746**	**46**	**21**	**5**	**2**	**0**	**0**	**0**	**1,819**
1. Abdominal wall defect	36	20	—	—	—	—	—	—	—	20
2. Anencephaly	47	23	0	—	—	—	—	—	—	23
3. Anorectal atresia	14	9	0	—	—	—	—	—	—	9
4. Cleft lip	12	6	—	—	—	—	—	—	—	6
5. Cleft palate	28	11	—	—	—	—	—	—	—	11
6. Esophageal atresia	2	1	0	—	—	—	—	—	—	1
7. Renal agenesis	2	2	—	—	—	—	0	—	—	2
8. Down syndrome	419	244	1	2	0	0	—	—	—	248
9. Congenital heart anomalies	1,651	821	18	7	2	1	0	0	0	849
10. Spina bifida	293	142	3	1	—	—	—	—	—	146
Other congenital anomalies	938	465	23	11	3	1	0	0	0	504
N. Oral conditions	**720**	**137**	**60**	**35**	**14**	**45**	**48**	**7**	**1**	**347**
1. Dental caries	496	130	60	30	8	13	5	2	0	248
2. Periodontal disease	23	—	—	4	5	1	0	0	0	11
3. Edentulism	181	—	—	—	—	31	43	5	0	80
Other oral diseases	21	6	1	0	0	0	0	0	0	8
III. Injuries	***28,848***	***2,388***	***3,937***	***7,371***	***4,647***	***1,809***	***479***	***157***	***29***	***20,819***
A. Unintentional injuries	**18,876**	**2,241**	**3,518**	**3,262**	**2,036**	**1,023**	**290**	**104**	**18**	**12,491**
1. Road traffic accidents	6,374	424	1,412	964	807	425	113	37	5	4,186
2. Poisonings	954	143	120	126	145	51	15	0	0	599
3. Falls	976	109	224	113	65	60	27	17	4	619
4. Fires	1,739	441	453	69	37	38	12	5	1	1,057
5. Drownings	1,720	204	322	293	305	153	15	0	0	1,294
6. Other unintentional injuries	7,112	919	988	1,698	677	296	108	44	7	4,736
B. Intentional injuries	**9,972**	**148**	**419**	**4,109**	**2,611**	**787**	**189**	**54**	**12**	**8,328**
1. Self-inflicted injuries	882	—	57	272	174	115	29	13	2	663
2. Violence	4,996	116	318	2,161	1,019	314	59	18	2	4,007
3. War	4,090	31	44	1,675	1,418	357	101	22	7	3,655
Other intentional injuries	3	1	0	1	0	0	0	0	0	2

Table 3C.7 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
1,097	**204**	**381**	**347**	**578**	**428**	**275**	**79**	**3,390**
0	5	24	34	35	24	18	6	146
7	9	35	69	157	119	58	9	462
0	7	8	0	2	1	1	0	19
1,090	184	314	244	384	285	198	64	2,763
155	**69**	**133**	**130**	**308**	**243**	**184**	**58**	**1,281**
62	60	68	78	230	204	158	47	907
—	—	—	—	—	—	—	—	—
93	10	66	53	78	39	26	10	375
71	**25**	**51**	**61**	**94**	**73**	**75**	**24**	**473**
27	**68**	**206**	**319**	**306**	**175**	**81**	**14**	**1,196**
3	11	21	45	43	20	13	2	158
—	1	118	225	213	134	55	9	755
—	0	3	1	3	2	1	0	11
8	36	18	20	14	4	1	0	101
16	20	46	29	33	14	11	3	172
1,569	**33**	**13**	**2**	**2**	**1**	**1**	**0**	**1,622**
16	—	0	—	—	—	—	—	16
24	—	0	—	—	0	—	—	24
4	—	—	—	—	—	—	—	4
6	—	—	—	—	—	—	—	6
17	—	—	—	—	—	—	—	17
1	—	—	—	—	—	—	—	1
0	—	0	—	—	0	—	—	0
166	3	2	—	1	—	—	—	171
782	11	5	2	1	0	1	0	802
146	0	1	0	—	—	—	—	147
407	19	6	1	1	1	0	0	434
135	**61**	**37**	**15**	**53**	**62**	**10**	**1**	**373**
128	59	30	8	14	5	3	1	248
—	—	4	6	1	0	0	0	12
—	—	—	—	37	56	7	0	101
7	2	2	1	0	0	0	0	13
1,625	**2,457**	**1,817**	**1,117**	**655**	**221**	**108**	**29**	**8,030**
1,536	**2,132**	**1,252**	**745**	**445**	**167**	**87**	**22**	**6,385**
336	950	384	261	169	62	22	4	2,188
60	70	90	65	31	25	10	2	355
82	148	39	23	23	17	19	6	357
348	177	62	46	30	8	9	2	682
137	103	113	28	34	12	0	0	426
572	685	564	322	158	43	26	8	2,377
89	**325**	**565**	**373**	**210**	**54**	**21**	**7**	**1,645**
0	13	110	52	32	8	4	1	220
85	187	375	227	86	18	8	3	989
4	125	81	93	92	27	9	3	435
0	0	0	0	0	0	—	0	1

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.8 DALYs(3,0) by Cause, Sex, and Age in High-Income Countries, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
Population (millions)	*929*	*28*	*60*	*96*	*107*	*88*	*40*	*27*	*10*	*457*
All causes	**149,161**	**3,641**	**1,706**	**8,093**	**10,396**	**16,700**	**14,284**	**14,522**	**7,444**	**76,786**
I. Communicable, maternal, perinatal, and nutritional conditions	***8,561***	***1,170***	***126***	***365***	***601***	***561***	***411***	***573***	***503***	***4,310***
A. Infectious and parasitic diseases	**3,375**	**288**	**68**	**228**	**506**	**375**	**182**	**176**	**86**	**1,909**
1. **Tuberculosis**	**219**	**1**	**1**	**8**	**23**	**36**	**28**	**33**	**15**	**146**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**145**	**7**	**0**	**9**	**9**	**1**	**0**	**0**	**0**	**26**
a. Syphilis	13	5	0	0	0	0	0	0	0	7
b. Chlamydia	100	1	0	4	4	0	0	—	—	9
c. Gonorrhea	27	0	0	5	5	0	0	0	0	10
d. Other sexually transmitted diseases	4	0	—	—	0	0	0	0	0	0
3. **HIV/AIDS**	**665**	**2**	**1**	**84**	**288**	**119**	**14**	**3**	**0**	**510**
4. **Diarrheal diseases**	**444**	**121**	**13**	**20**	**22**	**19**	**11**	**9**	**6**	**222**
5. **Childhood-cluster diseases**	**175**	**70**	**2**	**1**	**1**	**1**	**1**	**1**	**0**	**76**
a. Pertussis	139	68	1	—	—	—	0	—	—	69
b. Poliomyelitis	8	0	0	0	0	1	1	1	0	4
c. Diphtheria	0	0	0	—	0	—	—	0	0	0
d. Measles	23	1	1	0	0	0	—	0	—	3
e. Tetanus	5	0	0	0	0	0	0	0	0	1
6. **Meningitis**	**131**	**27**	**5**	**7**	**7**	**9**	**5**	**4**	**1**	**65**
7. **Hepatitis B**[a]	**86**	**0**	**0**	**2**	**12**	**23**	**10**	**6**	**2**	**55**
Hepatitis C[a]	**185**	**0**	**0**	**1**	**19**	**53**	**22**	**15**	**3**	**113**
8. **Malaria**	**9**	**1**	**0**	**0**	**1**	**2**	**0**	**0**	**0**	**6**
9. **Tropical-cluster diseases**	**219**	**4**	**22**	**75**	**65**	**11**	**2**	**1**	**0**	**180**
a. Trypanosomiasis	0	—	—	—	—	—	0	—	—	0
b. Chagas' disease	1	0	0	0	0	0	0	0	0	0
c. Schistosomiasis	1	0	0	0	0	0	0	0	0	1
d. Leishmaniasis	5	0	0	0	0	0	0	0	0	1
e. Lymphatic filariasis	212	4	21	75	64	11	2	1	0	178
f. Onchocerciasis	0	0	0	0	0	0	0	0	0	0
10. **Leprosy**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
11. **Dengue**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
12. **Japanese encephalitis**	**6**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
13. **Trachoma**	**10**	**0**	**0**	**0**	**3**	**2**	**0**	**0**	**0**	**5**
14. **Intestinal nematode infections**	**11**	**1**	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
a. Ascariasis	5	0	2	0	0	0	0	0	0	2
b. Trichuriasis	3	0	1	—	—	—	—	—	—	1
c. Hookworm disease	2	0	1	—	0	0	—	0	0	1
Other intestinal infections	1	0	0	0	0	0	0	0	0	0
Other infectious diseases	1,070	53	18	21	56	101	87	104	58	497
B. Respiratory infections	**2,474**	**52**	**46**	**24**	**61**	**141**	**188**	**356**	**396**	**1,264**
1. Lower respiratory infections	2,314	33	10	21	57	137	184	351	391	1,183
2. Upper respiratory infections	60	3	2	3	4	4	4	5	4	30
3. Otitis media	100	17	34	0	0	0	0	0	0	51
C. Maternal conditions	**391**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	4	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	78	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	4	—	—	—	—	—	—	—	—	—
4. Obstructed labor	9	—	—	—	—	—	—	—	—	—
5. Abortion	4	—	—	—	—	—	—	—	—	—
Other maternal conditions	292	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[b]	**1,408**	**773**	**1**	**1**	**0**	**0**	**0**	**—**	**—**	**775**
1. Low birthweight	467	252	0	—	0	—	0	—	—	252
2. Birth asphyxia and birth trauma	530	291	1	0	0	0	—	—	—	292
Other perinatal conditions	412	229	0	1	0	0	—	—	—	230
E. Nutritional deficiencies	**912**	**57**	**12**	**112**	**33**	**44**	**41**	**41**	**21**	**362**
1. Protein-energy malnutrition	130	35	0	1	2	6	5	6	7	61
2. Iodine deficiency	2	1	0	0	0	0	0	0	0	1
3. Vitamin A deficiency	1	0	0	—	—	—	0	—	0	0
4. Iron-deficiency anemia	758	20	11	111	31	37	35	33	13	291
Other nutritional disorders	21	1	0	0	1	2	1	1	2	9

Table 3C.8 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
27	*57*	*92*	*105*	*90*	*44*	*36*	*21*	*472*
3,163	**1,636**	**6,661**	**8,187**	**12,971**	**11,408**	**15,017**	**13,333**	**72,375**
1,007	***206***	***626***	***532***	***350***	***290***	***511***	***729***	***4,251***
275	**113**	**192**	**252**	**174**	**140**	**184**	**136**	**1,466**
1	**4**	**7**	**9**	**10**	**11**	**20**	**12**	**73**
6	**2**	**79**	**27**	**2**	**1**	**1**	**1**	**119**
5	0	0	0	0	0	0	0	6
1	2	69	18	1	0	—	0	91
0	0	9	8	0	0	0	0	18
0	0	0	1	1	1	1	1	4
2	**2**	**32**	**88**	**28**	**3**	**1**	**0**	**155**
114	**13**	**19**	**22**	**18**	**11**	**13**	**13**	**222**
71	**22**	**1**	**1**	**1**	**1**	**1**	**1**	**99**
70	1	0	—	0	—	—	—	70
0	0	0	0	1	1	1	0	4
0	0	—	—	0	—	—	—	0
2	18	0	0	0	—	—	0	20
0	3	0	0	0	0	0	0	4
23	**12**	**7**	**6**	**7**	**5**	**5**	**2**	**66**
0	**0**	**1**	**4**	**8**	**8**	**7**	**2**	**30**
0	**0**	**1**	**7**	**18**	**20**	**20**	**6**	**72**
1	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
1	**7**	**15**	**13**	**2**	**0**	**0**	**0**	**38**
—	0	—	0	—	—	—	—	0
0	0	0	0	0	0	0	0	0
0	0	0	0	0	0	0	0	0
0	4	0	0	0	0	0	0	4
1	3	14	13	1	0	0	0	34
—	0	0	0	0	0	0	0	0
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
1	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**3**
0	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**5**
1	**4**	**0**	**0**	**0**	**0**	**0**	**0**	**5**
0	2	0	0	0	0	0	0	2
0	1	—	0	—	—	—	—	2
0	1	0	—	—	0	—	—	1
0	0	0	0	0	0	0	0	0
53	44	31	74	79	78	115	99	573
46	**59**	**19**	**41**	**86**	**113**	**291**	**555**	**1,210**
28	25	15	37	82	110	286	548	1,131
2	2	4	4	3	3	6	7	31
16	32	0	0	0	0	0	0	49
0	**0**	**241**	**150**	**1**	**—**	**0**	**0**	**391**
0	0	1	2	0	—	—	—	4
—	0	56	22	0	—	—	—	78
—	0	2	2	0	—	—	0	4
—	—	6	3	0	—	—	—	9
—	0	3	1	0	—	—	—	4
—	0	172	119	0	—	0	0	292
632	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**634**
215	0	—	—	—	—	—	—	215
237	0	0	—	0	—	0	0	237
181	0	0	0	0	0	0	0	182
54	**33**	**174**	**89**	**89**	**37**	**35**	**38**	**550**
33	3	1	2	3	4	8	16	69
1	0	0	0	0	0	0	0	1
0	0	—	—	—	—	0	0	1
20	28	173	85	85	33	25	18	467
1	1	1	2	1	1	2	4	12

(Continues on the following page.)

Table 3C.8 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
II. Noncommunicable diseases	***129,356***	***2,238***	***1,189***	***5,421***	***7,675***	***14,623***	***13,311***	***13,573***	***6,756***	***64,784***
A. Malignant neoplasms	**25,888**	**30**	**55**	**189**	**764**	**3,587**	**4,150**	**3,840**	**1,334**	**13,949**
1. Mouth and oropharynx cancers	576	0	0	4	38	193	120	65	17	437
2. Esophageal cancer	702	0	0	1	25	195	184	124	32	561
3. Stomach cancer	1,628	0	0	6	59	258	313	282	99	1,017
4. Colon and rectal cancers	3,175	0	0	9	79	422	519	484	179	1,692
5. Liver cancer	1,223	1	1	6	49	265	291	204	46	863
6. Pancreas cancer	1,232	0	0	1	30	191	207	172	53	654
7. Trachea, bronchus, and lung cancers	5,397	0	0	4	125	945	1,193	1,066	271	3,606
8. Melanoma and other skin cancers	409	0	0	7	36	80	55	46	19	244
9. Breast cancer	2,509	0	—	0	2	5	4	4	2	17
10. Cervix uteri cancer	319	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	586	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	651	—	—	—	—	—	—	—	—	—
13. Prostate cancer	1,212	0	0	0	4	104	309	500	295	1,212
14. Bladder cancer	670	0	0	2	12	94	137	172	80	497
15. Lymphomas and multiple myeloma	1,362	1	4	27	68	184	192	189	66	730
16. Leukemia	919	11	20	47	57	105	113	118	47	518
Other malignant neoplasms	3,316	16	29	74	182	546	512	414	128	1,901
B. Other neoplasms	**556**	**6**	**5**	**11**	**23**	**55**	**65**	**78**	**43**	**286**
C. Diabetes mellitus	**4,192**	**1**	**3**	**43**	**300**	**676**	**465**	**384**	**159**	**2,032**
D. Endocrine disorders	**2,442**	**355**	**46**	**73**	**127**	**190**	**114**	**117**	**69**	**1,090**
E. Neuropsychiatric conditions	**31,230**	**520**	**689**	**4,235**	**3,162**	**1,975**	**1,202**	**1,445**	**1,020**	**14,248**
1. Unipolar depressive disorders	8,408	0	268	873	963	662	259	75	24	3,126
2. Bipolar affective disorder	1,056	0	20	436	69	3	1	0	0	531
3. Schizophrenia	1,115	0	120	401	43	11	4	2	1	582
4. Epilepsy	464	13	31	55	66	47	21	14	5	252
5. Alcohol use disorders	4,171	0	25	1,289	1,269	592	107	38	7	3,328
6. Alzheimer's and other dementias	7,468	22	11	15	15	92	455	957	817	2,384
7. Parkinson's disease	1,086	0	0	0	8	91	159	196	91	546
8. Multiple sclerosis	293	0	6	29	40	34	10	5	1	124
9. Drug use disorders	1,242	0	10	490	336	104	4	0	0	944
10. Post-traumatic stress disorder	369	0	2	39	36	17	1	1	0	96
11. Obsessive-compulsive disorder	399	—	2	91	56	10	3	2	0	164
12. Panic disorder	532	—	8	149	3	14	2	2	0	178
13. Insomnia (primary)	691	—	4	57	77	77	46	26	6	292
14. Migraine	1,129	8	101	162	14	0	0	0	0	285
15. Mental retardation, lead-caused	187	87	1	2	2	2	1	1	0	96
Other neuropsychiatric disorders	2,619	390	78	146	165	218	128	126	67	1,319
F. Sense organ diseases	**7,676**	**0**	**1**	**38**	**577**	**1,100**	**1,024**	**718**	**130**	**3,589**
1. Glaucoma	268	0	0	1	9	41	33	17	6	107
2. Cataracts	493	0	0	4	30	67	61	30	9	201
3. Vision disorders, age-related	1,525	0	1	9	59	212	191	103	34	611
4. Hearing loss, adult onset	5,387	—	—	24	479	779	739	567	81	2,669
Other sense organ disorders	3	0	0	0	0	0	0	0	0	1
G. Cardiovascular diseases	**29,859**	**43**	**22**	**189**	**1,089**	**3,491**	**3,771**	**4,524**	**2,787**	**15,916**
1. Rheumatic heart disease	199	1	0	2	5	15	18	17	8	65
2. Hypertensive heart disease	1,209	0	0	4	39	119	108	135	119	526
3. Ischemic heart disease	12,390	1	3	37	425	1,797	1,879	2,132	1,126	7,400
4. Cerebrovascular disease	9,354	6	4	27	279	937	1,105	1,360	792	4,510
5. Inflammatory heart diseases	982	9	5	34	91	160	135	122	53	610
Other cardiovascular diseases	5,724	26	9	85	251	463	526	758	689	2,806
H. Respiratory diseases	**9,801**	**312**	**236**	**370**	**492**	**1,141**	**950**	**1,151**	**609**	**5,261**
1. Chronic obstructive pulmonary disease	5,282	1	4	48	249	785	614	750	367	2,818
2. Asthma	1,660	121	198	272	101	79	38	38	18	865
Other respiratory diseases	2,859	190	34	50	143	277	298	363	224	1,579

Table 3C.8 Continued

Female								
0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
1,992	***1,160***	***5,264***	***6,885***	***11,998***	***10,807***	***14,159***	***12,308***	***64,572***
24	**48**	**159**	**1,068**	**3,204**	**2,886**	**3,090**	**1,458**	**11,939**
0	0	2	12	43	33	30	18	139
0	0	0	4	31	38	44	24	142
0	0	7	53	131	139	174	107	611
0	0	8	74	324	357	451	270	1,483
1	1	3	15	65	103	124	49	360
0	0	1	17	115	156	196	92	578
0	0	3	87	466	521	534	181	1,792
0	0	6	27	48	32	32	20	165
0	0	12	371	916	534	456	202	2,492
0	0	11	90	117	50	37	15	319
0	0	4	55	204	152	125	47	586
0	1	10	56	214	170	147	54	651
—	—	—	—	—	—	—	—	—
0	0	0	6	23	36	62	47	174
1	3	18	40	123	155	198	94	632
9	16	29	41	74	77	100	55	401
13	27	47	119	311	334	381	184	1,416
6	**6**	**9**	**20**	**43**	**48**	**78**	**62**	**271**
1	**2**	**28**	**227**	**570**	**467**	**535**	**330**	**2,161**
365	**37**	**101**	**152**	**260**	**122**	**162**	**152**	**1,351**
456	**621**	**4,183**	**2,837**	**2,139**	**1,419**	**2,303**	**3,024**	**16,982**
0	253	1,479	1,654	1,228	411	172	86	5,283
0	16	427	74	4	2	1	1	526
0	61	407	41	12	4	4	2	533
11	30	45	46	35	19	17	9	212
0	8	341	312	143	26	12	2	843
22	11	15	15	117	596	1,679	2,631	5,084
0	0	0	7	68	140	197	129	540
0	7	32	52	48	18	10	3	169
0	6	151	103	35	2	0	0	297
0	2	108	87	69	3	4	1	273
—	4	120	89	19	3	1	0	235
—	7	301	5	31	4	4	1	354
—	3	63	100	104	69	50	10	398
11	153	585	94	0	0	0	0	844
83	1	1	2	2	1	1	0	91
329	60	110	157	225	121	152	147	1,301
1	**3**	**41**	**556**	**1,179**	**1,217**	**851**	**239**	**4,087**
0	1	2	15	48	51	31	14	161
0	1	4	32	91	87	54	22	292
1	1	10	95	300	246	176	85	915
—	—	24	414	740	832	589	118	2,718
0	0	0	0	0	0	0	0	1
35	**24**	**117**	**566**	**1,602**	**2,212**	**4,337**	**5,048**	**13,943**
0	2	2	6	21	33	43	27	134
0	0	3	20	65	86	186	323	684
1	3	19	121	537	881	1,677	1,751	4,991
5	6	20	215	648	813	1,548	1,591	4,844
10	4	17	40	66	69	93	74	372
20	8	57	164	266	329	791	1,283	2,918
257	**262**	**322**	**576**	**904**	**699**	**861**	**660**	**4,540**
1	1	57	435	656	452	522	341	2,465
90	238	212	42	66	55	55	37	796
166	23	53	99	182	192	283	282	1,280

(Continues on the following page.)

Table 3C.8 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total
I. Digestive diseases	**6,536**	**270**	**21**	**98**	**521**	**1,182**	**682**	**532**	**259**	**3,566**
1. Peptic ulcer disease	295	0	1	7	18	43	33	37	22	160
2. Cirrhosis of the liver	2,146	3	2	13	297	657	328	144	27	1,471
3. Appendicitis	35	1	2	4	5	4	2	2	1	20
Other digestive diseases	4,060	267	16	75	202	478	319	350	209	1,916
J. Genitourinary diseases	**2,074**	**23**	**2**	**19**	**53**	**292**	**237**	**276**	**198**	**1,101**
1. Nephritis and nephrosis	929	6	2	10	31	78	95	139	105	467
2. Benign prostatic hypertrophy	342	—	—	0	0	159	90	64	29	342
Other genitourinary system diseases	803	17	1	9	22	55	51	73	64	292
K. Skin diseases	**288**	**2**	**2**	**5**	**11**	**18**	**17**	**28**	**27**	**110**
L. Musculoskeletal diseases	**6,437**	**7**	**18**	**76**	**478**	**776**	**531**	**447**	**113**	**2,447**
1. Rheumatoid arthritis	1,051	1	5	10	45	103	66	51	14	295
2. Osteoarthritis	3,786	0	0	20	188	444	370	320	54	1,397
3. Gout	480	—	0	12	181	145	42	20	8	408
4. Low back pain	246	4	9	18	39	36	14	9	3	132
Other musculoskeletal disorders	875	2	4	16	25	49	39	47	33	215
M. Congenital anomalies	**1,420**	**623**	**17**	**32**	**28**	**24**	**9**	**5**	**2**	**740**
1. Abdominal wall defect	6	3	0	0	0	0	0	0	0	3
2. Anencephaly	18	8	0	0	0	0	0	0	0	8
3. Anorectal atresia	2	1	0	0	0	0	0	0	0	1
4. Cleft lip	6	3	0	0	0	0	0	0	0	3
5. Cleft palate	7	3	0	0	0	0	0	0	0	3
6. Esophageal atresia	3	1	0	0	0	0	0	0	0	1
7. Renal agenesis	15	10	0	0	0	0	0	0	0	10
8. Down syndrome	196	88	1	3	3	8	2	0	0	104
9. Congenital heart anomalies	758	335	8	18	16	10	4	3	1	394
10. Spina bifida	63	26	1	1	1	0	0	0	0	29
Other congenital anomalies	347	144	8	10	8	6	3	2	1	183
N. Oral conditions	**957**	**45**	**70**	**44**	**49**	**115**	**94**	**26**	**5**	**448**
1. Dental caries	462	44	70	39	23	23	17	11	4	230
2. Periodontal disease	28	—	—	3	8	2	1	0	0	14
3. Edentulism	454	—	—	1	18	89	76	14	1	198
Other oral diseases	12	2	0	0	1	1	0	0	0	5
III. Injuries	***11,244***	***234***	***391***	***2,308***	***2,120***	***1,517***	***562***	***376***	***185***	***7,692***
A. Unintentional injuries	**7,876**	**215**	**334**	**1,579**	**1,302**	**928**	**385**	**289**	**158**	**5,189**
1. Road traffic accidents	3,045	38	90	921	571	336	113	67	20	2,157
2. Poisonings	494	3	3	88	162	75	10	5	2	347
3. Falls	1,459	41	57	176	163	159	91	96	72	856
4. Fires	215	15	13	21	31	33	10	8	3	136
5. Drownings	304	23	20	58	45	40	18	13	5	222
6. Other unintentional injuries	2,360	94	151	315	330	285	142	100	55	1,471
B. Intentional injuries	**3,368**	**19**	**57**	**729**	**818**	**588**	**176**	**87**	**27**	**2,503**
1. Self-inflicted injuries	2,581	0	38	441	635	523	165	83	26	1,911
2. Violence	765	19	19	278	175	63	11	4	1	571
3. War	10	0	0	4	4	1	0	0	0	9
Other intentional injuries	12	0	0	5	5	2	0	0	0	12

Table 3C.8 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
204	**25**	**94**	**298**	**681**	**488**	**637**	**542**	**2,969**
0	1	4	10	30	19	34	37	135
1	2	8	117	237	151	123	37	675
0	2	2	3	2	1	2	2	15
203	20	80	168	411	318	478	466	2,145
22	**6**	**22**	**57**	**153**	**157**	**262**	**294**	**973**
5	4	7	20	56	83	142	146	462
—	—	—	—	—	—	—	—	—
17	2	15	37	97	74	121	148	511
3	**3**	**6**	**12**	**20**	**22**	**44**	**70**	**178**
7	**37**	**118**	**443**	**1,092**	**945**	**938**	**411**	**3,990**
3	21	34	121	285	140	102	51	755
0	0	15	187	605	676	688	217	2,389
0	0	4	13	21	15	15	4	72
2	11	12	28	32	14	10	5	114
2	5	52	94	149	100	123	134	660
568	**19**	**23**	**23**	**24**	**10**	**8**	**4**	**679**
2	0	0	0	0	0	0	0	2
9	0	0	0	0	0	0	0	9
1	0	0	0	0	0	0	0	1
3	0	0	0	0	0	0	0	3
4	0	0	0	0	0	0	0	4
1	0	0	0	0	0	0	0	2
5	0	0	0	0	0	0	0	6
74	1	2	3	8	3	0	0	92
311	8	12	13	10	4	4	2	364
30	1	1	1	0	0	0	0	34
129	9	7	6	5	3	3	2	164
43	**67**	**42**	**48**	**126**	**115**	**54**	**15**	**509**
41	66	37	22	23	18	15	9	232
—	0	3	8	2	1	1	0	14
—	—	1	18	100	96	37	4	256
2	0	0	1	1	0	1	1	7
164	***269***	***771***	***770***	***623***	***311***	***347***	***296***	***3,552***
149	**237**	**578**	**501**	**413**	**233**	**298**	**279**	**2,687**
30	69	308	195	145	66	57	18	888
2	3	26	63	37	8	5	3	147
29	33	64	56	64	61	129	167	603
10	13	11	14	13	6	7	4	79
13	13	8	9	11	8	13	6	82
65	106	162	163	142	84	87	80	889
15	**32**	**193**	**270**	**211**	**79**	**49**	**17**	**865**
0	20	130	203	185	73	45	15	670
15	12	63	66	26	6	4	1	194
0	0	0	0	0	0	0	0	1
0	0	0	0	0	0	0	0	0

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

b. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

Table 3C.9 DALYs(3,0) by Cause, Sex, and Age in the World, 2001
(thousands)

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total[a]
Population (millions)	*6,148*	*317*	*623*	*808*	*653*	*415*	*164*	*88*	*25*	*3,093*
All causes	**1,535,871**	**221,294**	**44,197**	**105,973**	**116,457**	**130,728**	**88,774**	**63,545**	**21,509**	**792,478**
I. Communicable, maternal, perinatal, and nutritional conditions	***560,937***	***170,202***	***16,479***	***22,918***	***32,862***	***19,064***	***8,386***	***5,140***	***1,890***	***276,941***
A. Infectious and parasitic diseases	**324,038**	**79,163**	**12,459**	**20,598**	**30,632**	**16,275**	**5,573**	**2,727**	**709**	**168,136**
1. **Tuberculosis**	**36,093**	**731**	**616**	**4,401**	**6,990**	**5,969**	**2,799**	**1,195**	**204**	**22,906**
2. **Sexually transmitted diseases excluding HIV/AIDS**	**9,483**	**1,509**	**19**	**712**	**546**	**506**	**146**	**55**	**16**	**3,509**
a. Syphilis	4,134	1,009	2	106	268	429	140	53	15	2,021
b. Chlamydia	2,538	36	5	158	36	1	0	—	—	236
c. Gonorrhea	2,578	449	12	445	220	7	1	0	0	1,135
d. Other sexually transmitted diseases	233	15	0	3	22	69	4	2	1	117
3. **HIV/AIDS**	**71,461**	**5,324**	**1,571**	**8,918**	**16,879**	**4,616**	**438**	**43**	**1**	**37,790**
4. **Diarrheal diseases**	**59,141**	**27,878**	**705**	**548**	**587**	**482**	**280**	**213**	**121**	**30,814**
5. **Childhood-cluster diseases**	**43,305**	**17,046**	**3,307**	**685**	**279**	**127**	**36**	**13**	**6**	**21,498**
a. Pertussis	11,543	5,691	50	—	—	—	0	—	—	5,741
b. Poliomyelitis[b]	144	15	8	25	17	5	1	1	0	72
c. Diphtheria	164	76	6	1	1	1	0	0	0	86
d. Measles	23,113	8,433	2,717	302	0	0	0	0	—	11,452
e. Tetanus	8,341	2,831	526	356	260	121	34	12	6	4,146
6. **Meningitis**	**5,607**	**1,335**	**477**	**360**	**252**	**214**	**78**	**58**	**15**	**2,788**
7. **Hepatitis B[c]**	**2,167**	**93**	**108**	**226**	**410**	**453**	**121**	**45**	**11**	**1,467**
Hepatitis C[c]	**1,029**	**31**	**44**	**83**	**182**	**235**	**70**	**32**	**7**	**684**
8. **Malaria**	**39,970**	**17,345**	**498**	**455**	**385**	**278**	**125**	**71**	**20**	**19,178**
9. **Tropical-cluster diseases**	**10,312**	**362**	**1,939**	**2,250**	**1,365**	**706**	**162**	**63**	**13**	**6,860**
a. Trypanosomiasis	1,333	67	322	189	149	104	9	3	0	844
b. Chagas' disease	585	0	0	126	62	67	32	12	4	303
c. Schistosomiasis	1,526	88	279	208	144	113	58	25	5	920
d. Leishmaniasis	1,762	89	383	306	171	66	19	6	0	1,039
e. Lymphatic filariasis	4,667	111	935	1,385	769	272	19	6	1	3,497
f. Onchocerciasis	439	7	20	37	71	84	25	10	3	257
10. **Leprosy**	**192**	**7**	**19**	**16**	**23**	**29**	**11**	**8**	**1**	**115**
11. **Dengue**	**529**	**61**	**143**	**12**	**9**	**6**	**3**	**2**	**1**	**238**
12. **Japanese encephalitis**	**604**	**91**	**69**	**47**	**65**	**11**	**3**	**2**	**1**	**288**
13. **Trachoma**	**2,630**	**2**	**2**	**23**	**155**	**213**	**150**	**88**	**21**	**654**
14. **Intestinal nematode infections**	**2,349**	**229**	**914**	**12**	**8**	**10**	**6**	**3**	**1**	**1,183**
a. Ascariasis	1,158	112	463	1	0	0	0	0	0	577
b. Trichuriasis	492	45	206	1	1	1	1	0	0	254
c. Hookworm disease	636	56	238	10	6	8	5	2	1	325
Other intestinal infections	63	16	6	1	1	2	1	0	0	28
Other infectious diseases	39,165	7,118	2,028	1,850	2,498	2,419	1,145	839	270	18,166
B. Respiratory infections	**89,184**	**32,372**	**2,521**	**1,104**	**1,417**	**2,019**	**2,487**	**2,185**	**1,094**	**45,200**
1. Lower respiratory infections	85,920	31,687	1,940	1,026	1,330	1,936	2,411	2,137	1,072	43,540
2. Upper respiratory infections	1,740	428	69	67	75	80	74	48	21	862
3. Otitis media	1,525	258	511	11	12	3	2	1	0	798
C. Maternal conditions	**26,774**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**	**—**
1. Maternal hemorrhage	3,926	—	—	—	—	—	—	—	—	—
2. Maternal sepsis	5,345	—	—	—	—	—	—	—	—	—
3. Hypertensive disorders of pregnancy	1,894	—	—	—	—	—	—	—	—	—
4. Obstructed labor	2,504	—	—	—	—	—	—	—	—	—
5. Abortion	3,506	—	—	—	—	—	—	—	—	—
Other maternal conditions	9,599	—	—	—	—	—	—	—	—	—
D. Perinatal conditions[d]	**90,477**	**49,368**	**1**	**1**	**0**	**0**	**0**	**0**	**—**	**49,370**
1. Low birthweight	43,064	23,236	0	—	0	—	0	—	—	23,236
2. Birth asphyxia and birth trauma	31,958	17,938	1	0	0	0	—	—	—	17,939
Other perinatal conditions	15,455	8,195	0	1	0	0	—	0	—	8,196

Table 3C.9 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
301	*589*	*774*	*635*	*415*	*180*	*115*	*47*	*3,055*
209,408	**43,382**	**103,829**	**94,055**	**102,675**	**79,356**	**73,462**	**37,225**	**743,392**
161,941	***18,601***	***44,243***	***31,448***	***13,090***	***6,683***	***5,319***	***2,673***	***283,997***
80,936	**13,324**	**23,820**	**20,168**	**10,054**	**4,047**	**2,658**	**894**	**155,902**
655	**663**	**3,393**	**3,760**	**2,606**	**1,318**	**659**	**133**	**13,187**
1,698	**71**	**2,822**	**914**	**306**	**108**	**49**	**6**	**5,974**
1,219	3	407	244	128	65	42	4	2,113
34	50	1,744	325	128	21	0	0	2,302
434	18	661	323	7	2	0	0	1,443
11	0	10	23	44	20	6	2	116
5,144	**1,545**	**12,434**	**11,416**	**2,766**	**316**	**50**	**1**	**33,671**
25,682	**667**	**443**	**420**	**396**	**292**	**257**	**172**	**28,327**
17,204	**3,413**	**708**	**286**	**134**	**39**	**16**	**7**	**21,807**
5,752	50	0	—	0	0	—	—	5,802
15	7	25	17	5	1	1	0	72
61	16	0	0	0	0	0	0	78
8,546	2,799	315	0	0	0	—	0	11,661
2,830	541	368	268	129	38	15	6	4,195
1,497	**602**	**296**	**163**	**128**	**73**	**45**	**14**	**2,818**
163	**50**	**146**	**110**	**130**	**56**	**34**	**12**	**701**
62	**19**	**57**	**51**	**70**	**42**	**33**	**10**	**345**
18,796	**501**	**516**	**400**	**322**	**145**	**87**	**26**	**20,793**
297	**959**	**954**	**510**	**550**	**108**	**58**	**17**	**3,452**
37	187	121	79	57	6	2	0	490
0	0	138	46	56	24	13	5	282
59	190	151	92	57	23	24	9	606
115	302	192	58	34	17	4	0	723
78	260	320	184	297	22	8	1	1,169
7	20	32	51	49	15	7	2	183
9	**18**	**13**	**15**	**11**	**7**	**4**	**1**	**77**
70	**176**	**19**	**11**	**7**	**4**	**3**	**1**	**291**
145	**101**	**32**	**24**	**8**	**4**	**2**	**0**	**316**
2	**5**	**51**	**443**	**600**	**470**	**313**	**93**	**1,976**
244	**890**	**10**	**5**	**7**	**5**	**2**	**1**	**1,166**
125	455	0	0	0	0	0	0	581
39	197	1	0	1	0	0	0	238
54	232	8	5	6	4	2	0	311
25	7	1	0	1	1	1	0	36
9,268	3,643	1,925	1,642	2,014	1,059	1,049	400	20,999
30,531	**3,104**	**1,688**	**1,195**	**1,354**	**2,125**	**2,355**	**1,632**	**43,984**
29,804	2,475	1,636	1,158	1,325	2,072	2,316	1,593	42,380
480	162	44	36	27	51	39	39	878
247	467	8	2	2	2	0	0	727
0	**158**	**17,269**	**8,898**	**449**	**0**	**0**	**0**	**26,774**
0	0	1,914	1,860	152	—	—	—	3,926
—	0	3,823	1,439	83	—	—	—	5,345
—	1	1,147	700	46	—	—	0	1,894
—	—	1,751	740	14	—	—	—	2,504
—	155	2,702	647	2	—	—	—	3,506
—	2	5,932	3,512	154	0	0	0	9,599
41,105	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**41,106**
19,828	0	—	—	—	—	—	—	19,828
14,019	0	0	—	0	—	0	0	14,020
7,258	1	0	0	0	0	0	0	7,259

(Continues on the following page.)

Table 3C.9 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total[a]
E. Nutritional deficiencies	**30,463**	**9,299**	**1,498**	**1,215**	**812**	**770**	**326**	**227**	**87**	**14,234**
1. Protein-energy malnutrition	15,578	6,926	433	124	68	125	106	80	41	7,903
2. Iodine deficiency	2,876	1,074	352	0	1	2	1	0	0	1,431
3. Vitamin A deficiency	711	233	70	3	6	10	5	2	0	329
4. Iron-deficiency anemia	10,245	899	609	1,064	704	567	174	93	28	4,138
Other nutritional disorders	1,053	166	34	23	34	67	40	52	18	433
II. Noncommunicable diseases	***807,839***	***42,899***	***13,697***	***45,319***	***56,267***	***96,868***	***75,790***	***56,282***	***18,997***	***406,118***
A. Malignant neoplasms	**100,641**	**590**	**812**	**2,086**	**5,229**	**16,460**	**15,681**	**10,393**	**2,630**	**53,882**
1. Mouth and oropharynx cancers	4,654	5	12	119	420	1,243	986	412	86	3,284
2. Esophageal cancer	5,955	1	2	30	326	1,303	1,330	695	119	3,806
3. Stomach cancer	11,244	3	8	127	656	2,353	2,114	1,355	313	6,930
4. Colon and rectal cancers	8,236	1	4	118	437	1,195	1,277	972	293	4,297
5. Liver cancer	9,169	21	16	221	942	2,602	1,619	837	131	6,388
6. Pancreas cancer	2,853	0	2	7	129	530	474	322	82	1,547
7. Trachea, bronchus, and lung cancers	16,099	3	7	68	689	3,545	4,005	2,547	479	11,344
8. Melanoma and other skin cancers	909	1	2	22	74	163	116	84	30	493
9. Breast cancer	8,036	0	0	0	3	11	9	7	2	33
10. Cervix uteri cancer	4,119	—	—	—	—	—	—	—	—	—
11. Corpus uteri cancer	1,494	—	—	—	—	—	—	—	—	—
12. Ovarian cancer	2,139	—	—	—	—	—	—	—	—	—
13. Prostate cancer	2,691	1	1	4	16	276	812	1,101	480	2,691
14. Bladder cancer	2,174	2	2	10	58	331	480	454	157	1,494
15. Lymphomas and multiple myeloma	5,131	67	200	340	436	616	513	360	107	2,639
16. Leukemia	4,883	235	368	683	346	415	327	250	77	2,702
Other malignant neoplasms	10,854	251	190	336	696	1,876	1,618	996	273	6,235
B. Other neoplasms	**2,096**	**74**	**71**	**137**	**140**	**240**	**182**	**155**	**61**	**1,060**
C. Diabetes mellitus	**19,997**	**43**	**73**	**489**	**1,528**	**2,990**	**2,087**	**1,395**	**428**	**9,033**
D. Endocrine disorders	**13,385**	**4,018**	**262**	**378**	**423**	**601**	**306**	**255**	**124**	**6,368**
E. Neuropsychiatric conditions	**168,305**	**10,811**	**6,627**	**28,133**	**16,184**	**9,011**	**3,933**	**3,768**	**1,969**	**80,437**
1. Unipolar depressive disorders	51,835	0	2,720	6,565	5,955	3,739	1,165	255	57	20,457
2. Bipolar affective disorder	9,734	0	267	4,090	523	17	5	0	0	4,903
3. Schizophrenia	11,642	0	901	4,132	611	168	36	16	4	5,869
4. Epilepsy	6,223	514	668	916	657	341	127	62	17	3,301
5. Alcohol use disorders	15,178	2	126	5,319	4,696	2,214	396	100	15	12,868
6. Alzheimer's and other dementias	17,108	203	87	100	84	346	1,243	2,470	1,558	6,092
7. Parkinson's disease	2,325	5	3	10	74	241	299	351	140	1,124
8. Multiple sclerosis	1,209	1	49	194	165	74	21	9	2	515
9. Drug use disorders	5,647	1	79	2,255	1,506	559	31	4	1	4,436
10. Post-traumatic stress disorder	2,382	0	25	308	212	106	3	2	1	658
11. Obsessive-compulsive disorder	3,535	—	160	789	403	114	23	10	1	1,500
12. Panic disorder	4,547	—	78	1,358	19	71	9	6	1	1,540
13. Insomnia (primary)	2,909	—	32	335	375	265	142	58	12	1,218
14. Migraine	5,980	52	613	832	94	6	0	0	0	1,596
15. Mental retardation, lead-caused	8,786	4,406	17	24	9	6	2	1	0	4,466
Other neuropsychiatric disorders	19,263	5,627	802	908	802	745	431	422	160	9,895
F. Sense organ diseases	**79,951**	**30**	**167**	**1,659**	**8,646**	**13,118**	**8,066**	**3,831**	**734**	**36,251**
1. Glaucoma	4,380	7	30	129	356	690	414	207	51	1,883
2. Cataracts	28,643	17	101	610	2,480	4,636	2,734	1,289	290	12,157
3. Vision disorders, age-related	16,889	3	35	314	1,322	2,678	1,790	877	210	7,228
4. Hearing loss, adult onset	29,994	—	—	605	4,486	5,110	3,125	1,454	182	14,962
Other sense organ disorders	45	3	2	3	2	4	3	4	2	22
G. Cardiovascular diseases	**208,787**	**1,460**	**892**	**3,711**	**10,077**	**28,477**	**29,423**	**24,660**	**8,866**	**107,566**
1. Rheumatic heart disease	6,350	231	171	554	458	618	361	221	58	2,672
2. Hypertensive heart disease	11,178	27	21	114	473	1,413	1,516	1,276	524	5,365
3. Ischemic heart disease	84,273	104	219	1,070	4,207	14,072	13,452	10,641	3,396	47,161
4. Cerebrovascular disease	72,024	221	150	590	2,334	8,861	10,972	9,360	2,995	35,482
5. Inflammatory heart diseases	6,793	269	85	423	706	917	684	542	206	3,832
Other cardiovascular diseases	28,170	608	246	959	1,899	2,597	2,436	2,620	1,687	13,054

Table 3C.9 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
9,368	**2,013**	**1,467**	**1,186**	**1,232**	**511**	**306**	**146**	**16,230**
6,707	492	54	69	100	109	83	61	7,676
1,101	338	1	1	2	1	1	0	1,445
288	70	9	4	8	3	2	0	383
965	1,067	1,383	1,091	1,075	349	131	48	6,107
309	46	20	21	48	50	90	37	620
40,092	***14,171***	***43,825***	***51,687***	***82,360***	***69,779***	***66,115***	***33,693***	***401,721***
611	**717**	**1,761**	**6,147**	**14,252**	**11,268**	**8,926**	**3,076**	**46,759**
9	6	34	135	458	379	254	95	1,371
1	2	21	131	696	669	485	142	2,148
1	4	104	564	1,192	1,069	1,007	374	4,315
1	3	55	402	1,009	1,029	988	452	3,939
33	20	148	378	805	705	551	141	2,780
0	1	10	88	327	367	371	142	1,306
6	29	32	368	1,401	1,404	1,216	301	4,755
1	3	17	65	116	91	85	38	416
1	2	74	1,540	3,213	1,714	1,080	380	8,004
0	2	352	608	1,564	972	507	113	4,119
2	3	22	217	522	378	268	82	1,494
2	19	100	313	737	518	350	100	2,139
—	—	—	—	—	—	—	—	—
21	7	14	83	132	160	174	91	681
89	175	234	333	520	514	456	171	2,492
247	288	362	345	372	255	221	91	2,181
196	155	183	577	1,187	1,043	915	363	4,618
55	**57**	**79**	**152**	**270**	**168**	**166**	**89**	**1,037**
60	**80**	**428**	**1,458**	**3,193**	**2,781**	**2,195**	**767**	**10,963**
3,720	**250**	**534**	**606**	**786**	**454**	**403**	**263**	**7,017**
10,335	**6,740**	**28,102**	**16,199**	**10,155**	**5,338**	**5,790**	**5,208**	**87,868**
0	2,565	9,300	9,818	6,672	2,226	604	191	31,378
0	229	4,036	536	21	7	1	1	4,831
1	252	4,329	842	253	54	33	9	5,773
426	672	837	483	293	111	74	26	2,922
0	49	1,003	771	386	70	27	4	2,310
184	82	104	89	398	1,746	3,961	4,452	11,016
6	4	7	63	228	305	386	203	1,202
1	63	245	225	105	34	17	5	695
0	48	604	398	148	10	2	1	1,211
0	18	832	578	269	14	10	3	1,724
—	308	889	593	187	40	16	4	2,036
—	78	2,717	30	145	19	15	3	3,007
—	31	367	512	403	237	115	26	1,692
143	1,720	2,006	510	4	0	0	0	4,384
4,265	19	17	10	6	1	1	0	4,320
5,309	599	809	742	635	463	529	283	9,368
31	**117**	**1,309**	**9,039**	**15,393**	**10,710**	**5,686**	**1,415**	**43,700**
5	26	143	415	861	598	340	109	2,496
14	63	564	2,858	6,205	4,110	2,109	563	16,487
9	25	236	1,512	3,392	2,484	1,534	469	9,661
—	—	363	4,252	4,932	3,516	1,698	271	15,032
3	2	4	2	3	3	4	2	23
1,650	**955**	**3,251**	**6,314**	**18,322**	**24,551**	**29,769**	**16,410**	**101,222**
246	249	591	593	829	590	441	140	3,679
24	25	81	328	1,165	1,458	1,688	1,043	5,812
75	170	1,022	2,014	6,735	10,077	11,270	5,749	37,112
161	145	369	1,695	6,784	9,541	11,892	5,957	36,542
213	88	274	362	554	522	612	335	2,961
932	277	914	1,321	2,255	2,365	3,866	3,186	15,116

(Continues on the following page.)

Table 3C.9 Continued

Cause	Total	Male								
		0–4	5–14	15–29	30–44	45–59	60–69	70–79	80+	Total[a]
H. Respiratory diseases	**67,887**	**3,566**	**1,935**	**2,738**	**3,410**	**8,403**	**7,418**	**6,618**	**2,497**	**36,585**
1. Chronic obstructive pulmonary disease	38,736	49	19	168	1,556	6,144	5,776	5,216	1,866	20,795
2. Asthma	13,174	1,134	1,546	2,056	930	793	323	194	54	7,030
Other respiratory diseases	15,977	2,383	370	514	924	1,465	1,319	1,208	578	8,761
I. Digestive diseases	**58,937**	**7,636**	**879**	**2,686**	**5,094**	**8,203**	**4,118**	**2,531**	**830**	**31,977**
1. Peptic ulcer disease	5,096	91	67	401	685	1,009	487	306	96	3,142
2. Cirrhosis of the liver	15,778	259	154	634	2,131	3,828	1,776	818	148	9,749
3. Appendicitis	412	7	30	40	42	58	26	21	7	232
Other digestive diseases	37,651	7,279	628	1,611	2,236	3,307	1,829	1,386	579	18,854
J. Genitourinary diseases	**18,455**	**999**	**347**	**744**	**1,053**	**3,908**	**1,626**	**1,259**	**518**	**10,453**
1. Nephritis and nephrosis	10,005	333	285	593	808	1,182	933	717	285	5,136
2. Benign prostatic hypertrophy	2,955	—	—	0	12	2,277	346	236	84	2,955
Other genitourinary system diseases	5,495	665	63	150	233	449	347	306	148	2,362
K. Skin diseases	**3,985**	**501**	**227**	**306**	**298**	**274**	**147**	**123**	**63**	**1,939**
L. Musculoskeletal diseases	**32,130**	**209**	**450**	**1,369**	**3,786**	**4,338**	**2,120**	**1,136**	**249**	**13,657**
1. Rheumatoid arthritis	4,695	12	80	181	291	411	215	121	28	1,341
2. Osteoarthritis	17,452	0	3	387	1,536	2,414	1,430	723	106	6,600
3. Gout	3,265	0	0	135	1,488	999	188	59	14	2,884
4. Low back pain	1,938	72	176	202	251	220	70	32	8	1,030
Other musculoskeletal disorders	4,780	124	190	464	220	294	217	200	92	1,802
M. Congenital anomalies	**24,952**	**11,975**	**319**	**371**	**95**	**59**	**21**	**12**	**4**	**12,855**
1. Abdominal wall defect	116	63	0	0	0	0	0	0	0	63
2. Anencephaly	563	266	0	0	0	0	0	0	0	267
3. Anorectal atresia	33	21	0	0	0	0	0	0	0	21
4. Cleft lip	122	64	0	0	0	0	0	0	0	64
5. Cleft palate	138	70	0	0	0	0	0	0	0	70
6. Esophageal atresia	49	24	0	0	0	0	0	0	0	24
7. Renal agenesis	68	39	0	1	0	0	0	0	0	41
8. Down syndrome	3,612	1,824	29	60	6	10	2	0	0	1,932
9. Congenital heart anomalies	13,949	6,533	172	219	58	25	9	5	2	7,023
10. Spina bifida	1,551	732	10	5	1	1	0	0	0	750
Other congenital anomalies	4,751	2,340	106	85	29	23	9	6	2	2,599
N. Oral conditions	**8,331**	**988**	**633**	**511**	**305**	**786**	**662**	**147**	**23**	**4,054**
1. Dental caries	5,214	962	628	380	167	274	139	71	19	2,640
2. Periodontal disease	235	—	—	29	55	21	8	4	1	118
3. Edentulism	2,747	—	—	96	77	486	514	71	2	1,245
Other oral diseases	135	25	5	7	6	5	2	1	1	52
III. Injuries	***167,094***	***8,193***	***14,022***	***37,737***	***27,329***	***14,796***	***4,598***	***2,124***	***623***	***109,420***
A. Unintentional injuries	**121,111**	**7,822**	**12,781**	**22,914**	**16,768**	**10,264**	**3,317**	**1,600**	**496**	**75,962**
1. Road traffic accidents	35,063	1,224	3,358	8,492	6,496	3,539	973	429	88	24,598
2. Poisonings	7,608	289	322	1,051	1,429	1,348	378	95	17	4,930
3. Falls	15,041	1,024	1,727	2,336	1,547	1,161	560	456	202	9,013
4. Fires	10,295	938	878	905	769	409	123	63	17	4,103
5. Drownings	9,695	1,034	1,700	1,893	1,103	622	169	75	22	6,618
6. Other unintentional injuries	43,410	3,313	4,795	8,238	5,426	3,184	1,114	481	150	26,700
B. Intentional injuries	**45,983**	**370**	**1,240**	**14,822**	**10,560**	**4,533**	**1,281**	**523**	**127**	**33,457**
1. Self-inflicted injuries	20,255	3	376	4,379	3,689	2,372	811	377	84	12,092
2. Violence	18,897	259	779	7,703	4,535	1,569	302	106	29	15,282
3. War	6,502	91	71	2,632	2,258	563	157	35	12	5,818
Other intentional injuries	329	17	15	109	79	28	11	5	2	265

Table 3C.9 Continued

Female								
0–4	**5–14**	**15–29**	**30–44**	**45–59**	**60–69**	**70–79**	**80+**	**Total**
2,966	**2,051**	**2,259**	**2,982**	**5,901**	**5,313**	**6,400**	**3,430**	**31,302**
64	22	186	1,704	4,199	4,030	5,140	2,596	17,941
830	1,759	1,561	646	724	319	214	91	6,145
2,072	270	512	632	977	964	1,045	744	7,217
7,276	**1,189**	**2,465**	**3,047**	**5,311**	**3,355**	**2,898**	**1,420**	**26,960**
98	57	198	343	530	318	278	132	1,954
597	301	509	921	1,760	1,065	704	173	6,030
6	23	30	23	37	25	24	10	179
6,575	808	1,728	1,760	2,984	1,947	1,891	1,104	18,797
648	**339**	**742**	**1,072**	**1,838**	**1,436**	**1,261**	**665**	**8,002**
271	279	443	584	1,152	966	805	370	4,869
—	—	—	—	—	—	—	—	—
377	60	299	489	686	470	457	295	3,132
351	**161**	**290**	**307**	**330**	**221**	**223**	**163**	**2,046**
194	**582**	**1,803**	**3,946**	**5,710**	**3,382**	**2,124**	**733**	**18,473**
24	203	510	738	1,043	478	266	92	3,354
0	4	647	2,319	3,738	2,395	1,412	337	10,852
0	0	25	158	105	49	35	9	381
37	213	138	227	187	65	32	10	908
133	161	482	504	637	395	379	286	2,978
11,269	**325**	**292**	**101**	**64**	**23**	**16**	**6**	**12,097**
52	0	0	0	0	0	0	0	53
293	1	1	0	0	0	0	0	295
12	0	0	0	0	0	0	0	12
59	0	0	0	0	0	0	0	59
67	0	0	0	0	0	0	0	67
24	0	0	0	0	0	0	0	24
25	0	0	0	0	0	0	0	27
1,571	31	56	6	12	3	0	0	1,680
6,426	195	186	65	30	10	9	4	6,926
785	8	5	2	1	0	0	0	801
1,955	88	44	27	20	9	6	2	2,152
926	**608**	**511**	**315**	**835**	**777**	**259**	**47**	**4,277**
901	600	364	163	274	153	88	31	2,574
—	0	28	53	21	8	5	2	117
—	—	98	81	534	613	163	13	1,502
25	8	21	18	5	3	2	1	83
7,376	***10,611***	***15,762***	***10,920***	***7,225***	***2,894***	***2,027***	***860***	***57,675***
7,155	**9,559**	**11,043**	**7,597**	**5,176**	**2,228**	**1,631**	**759**	**45,149**
1,118	2,411	2,486	2,076	1,519	492	293	70	10,465
207	296	498	600	586	353	111	29	2,679
983	1,455	1,061	624	567	391	574	372	6,027
1,089	1,088	2,077	1,154	485	150	112	37	6,192
775	935	593	337	226	107	77	28	3,077
2,984	3,374	4,329	2,806	1,793	736	464	223	16,710
221	**1,051**	**4,719**	**3,323**	**2,050**	**666**	**396**	**100**	**12,526**
1	429	3,311	2,177	1,398	467	302	79	8,163
202	425	1,267	986	489	152	77	16	3,615
6	191	126	148	151	43	14	5	683
12	7	15	11	12	4	2	1	64

Source: Authors' compilation.

Note: — = an estimate of zero; the number zero in a cell indicates a non-zero estimate of less than 500.

a. World totals for males and females include residual populations not included in the World Bank regions.

b. For East Asia and Pacific, Europe and Central Asia, and Latin America and the Caribbean regions, these figures include late effects of polio cases with onset prior to regional certification of polio eradication in 1994, 2000, and 2002, respectively.

c. Does not include liver cancer and cirrhosis DALYs(3,0) resulting from chronic hepatitis virus infection.

d. This cause category includes "Causes arising in the perinatal period" as defined in the International Classification of Diseases, principally low birthweight, prematurity, birth asphyxia, and birth trauma, and does not include all causes of DALYs(3,0) occurring in the perinatal period.

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