

# Global Burden of Diabetes, 1995–2025

## Prevalence, numerical estimates, and projections

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**OBJECTIVE** — To estimate the prevalence of diabetes and the number of people with diabetes who are  $\geq 20$  years of age in all countries of the world for three points in time, i.e., the years 1995, 2000, and 2025, and to calculate additional parameters, such as sex ratio, urban-rural ratio, and the age structure of the diabetic population.

**RESEARCH DESIGN AND METHODS** — Age-specific diabetes prevalence estimates were applied to United Nations population estimates and projections for the number of adults aged  $\geq 20$  years in all countries of the world. For developing countries, urban and rural populations were considered separately.

**RESULTS** — Prevalence of diabetes in adults worldwide was estimated to be 4.0% in 1995 and to rise to 5.4% by the year 2025. It is higher in developed than in developing countries. The number of adults with diabetes in the world will rise from 135 million in 1995 to 300 million in the year 2025. The major part of this numerical increase will occur in developing countries. There will be a 42% increase, from 51 to 72 million, in the developed countries and a 170% increase, from 84 to 228 million, in the developing countries. Thus, by the year 2025,  $>75\%$  of people with diabetes will reside in developing countries, as compared with 62% in 1995. The countries with the largest number of people with diabetes are, and will be in the year 2025, India, China, and the U.S. In developing countries, the majority of people with diabetes are in the age range of 45–64 years. In the developed countries, the majority of people with diabetes are aged  $\geq 65$  years. This pattern will be accentuated by the year 2025. There are more women than men with diabetes, especially in developed countries. In the future, diabetes will be increasingly concentrated in urban areas.

**CONCLUSIONS** — This report supports earlier predictions of the epidemic nature of diabetes in the world during the first quarter of the 21st century. It also provides a provisional picture of the characteristics of the epidemic. Worldwide surveillance of diabetes is a necessary first step toward its prevention and control, which is now recognized as an urgent priority.

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In 1993, the World Health Organization (WHO) Ad Hoc Diabetes Reporting Group published standardized global estimates for the prevalence of diabetes and impaired glucose tolerance in adults, based on data from 75 communities in 32 countries (1).

These estimates provided, for the first time, comparable information on the prevalence of abnormal glucose tolerance from many populations worldwide. However, they did not meet the needs of those who frequently refer to the WHO diabetes

program for information on the number of people with diabetes in a particular country/community, nor did they take account of future trends in the burden of diabetes.

Therefore, a further study has now been undertaken that links data from the global database collected by WHO with demographic estimates and projections issued by the United Nations to estimate the number of people with diabetes in all countries of the world for three points in time, i.e., the years 1995, 2000, and 2025. In addition, the data have been analyzed in terms of certain additional parameters, such as sex ratio, urban-rural ratio, and the age structure of the diabetic population.

The principal purpose of the project was to assemble numerical estimates and projections for the frequency of diabetes in all countries as a primary source of information and as an aid to planning health care and public health interventions in WHO's member states.

**RESEARCH DESIGN AND METHODS** — This study is based on a set of 5-year age- and sex-specific estimates of diabetes prevalence from rural and urban areas of various countries. Criteria for inclusion were 1) a valid and apparently unbiased population sample and 2) a diagnosis of diabetes made according to the recommendations of recent WHO expert groups (2,3), i.e., a venous plasma glucose concentration of  $\geq 11.1$  mmol/l (or its equivalent) 2 h after a 75-g oral glucose challenge. Studies using only fasting blood glucose testing were excluded. The estimates were drawn from the studies listed in the earlier report (1) with the addition of new survey data from China (4), Indonesia (5), Japan (6), Pakistan (7), and Uzbekistan (8). These data were then applied to demographic estimates for the world's population issued by the United Nations Population Division (9).

In accordance with United Nations convention, Europe (including the former socialist economies), North America, Australia, New Zealand, and Japan were considered "developed" countries, with all other countries designated as "developing" countries. For regional groupings, the aggregations proposed by the World Development Report 1993 were adopted (10).

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**Abbreviations:** EME, established market economies; FSE, former socialist economies of Europe; LAC, Latin America and the Caribbean; MEC, Middle Eastern crescent; OAI, other Asia and islands; SSA, sub-Saharan Africa; WHO, World Health Organization.

A table elsewhere in this issue shows conventional and Systeme International (SI) units and conversion factors for many substances.

Because the great majority of people with diabetes are adults, the study was restricted to subjects aged  $\geq 20$  years. For the developed countries, risk factors were not considered to differ markedly in rural and urban areas, and estimates were applied nationally. However, for developing countries, rural and urban areas were considered separately, since prevalence is known to differ markedly with differences in diet, physical exercise, and other socioeconomic factors. Estimates for present and future urbanization patterns are also available from the United Nations Population Division (11,12). When either rural or urban prevalence data were unavailable, the urban rate was generally assumed to be twice the available rural estimate, or the rural estimate was taken as one-half the available urban estimate. That this relation holds for most populations in developing countries is evident from rural-urban comparisons of the age-standardized estimates presented in the earlier report (1). For countries lacking valid prevalence estimates, extrapolation from the nearest or socioeconomically and ethnically most similar country was performed. A listing of the data applied to each country's demographic estimates is given in APPENDIX 1.

The assumption underlying the study methodology was that, in addition to ethnicity, the size, sex distribution, age structure, and degree of urbanization determine the present and future frequency of diabetes in countries. Thus, for estimations for 1995, 2000, and 2025, the baseline age- and sex-specific prevalence estimates within rural and urban areas were maintained as a constant (i.e., inclusion in the models of population growth, aging, and urbanization was considered sufficient to capture present and future trends in diabetes frequency).

Not all data sets included the full age range under consideration ( $\geq 20$  years). Therefore, for each source of data, a logistic regression analysis was performed to estimate the relationship of age to the probability of having diabetes. The predicted probability was then used as an estimate of the missing age-specific prevalence(s) so that all the age-groups of interest, from 20–24 years to  $\geq 80$  years, could contribute to the models. This method also resulted in a stabilization of rates when numbers from the raw data were quite sparse.

In certain cases, combinations of data were made. For Novosibirsk, data for males and females were combined because of small numbers. For Israel, data from four surveys were combined to give national

estimates. For China, data from the 1994 National Diabetes Survey of 250,000 subjects in 16 provinces were aggregated into rural and urban estimates. For the U.K., two surveys were combined. For the U.S., National Health and Nutrition Examination Survey II data were used for ages 20–74 years, and Rancho Bernardo data were used for older subjects.

**RESULTS** — The detailed numerical estimates and other parameters of interest are presented for all countries and regions for the years 1995, 2000, and 2025 in APPENDIX 2.

### Demography

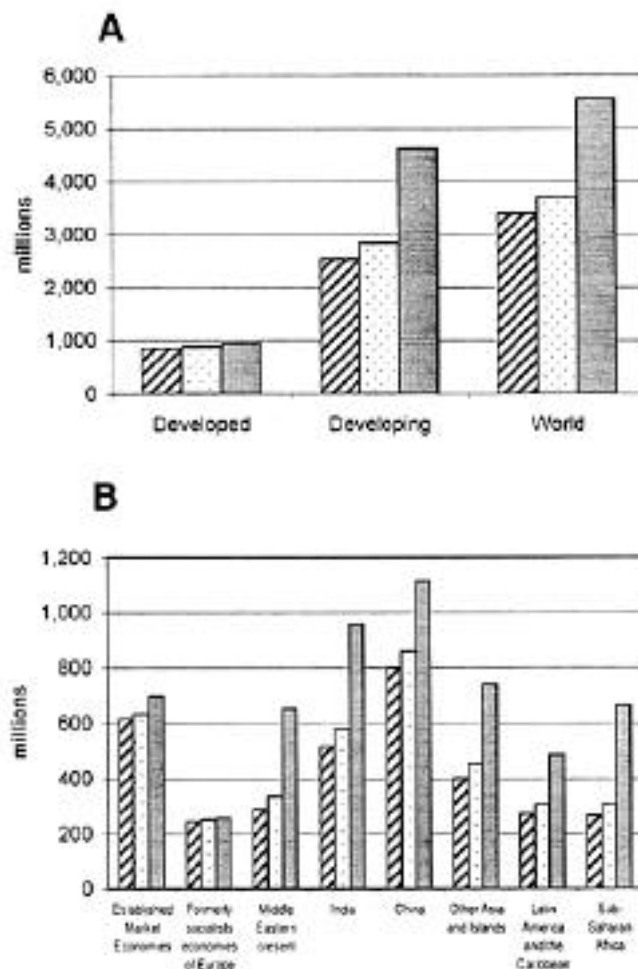
The size of the world's adult population (aged  $\geq 20$  years) is shown by year and region in Fig. 1. It can be seen that for the developed countries, total population size will remain relatively stable, with an 11% increase from 1995 to 2025 of  $\sim 1$  billion.

For the developing countries, the increase will be around 80%, from  $\sim 2.5$  billion in 1995 to  $>4$  billion in 2025. It is this increase that will determine the  $\sim 60\%$  growth of the world's adult population as a whole over these 30 years, from  $>3$  billion to  $>5$  billion.

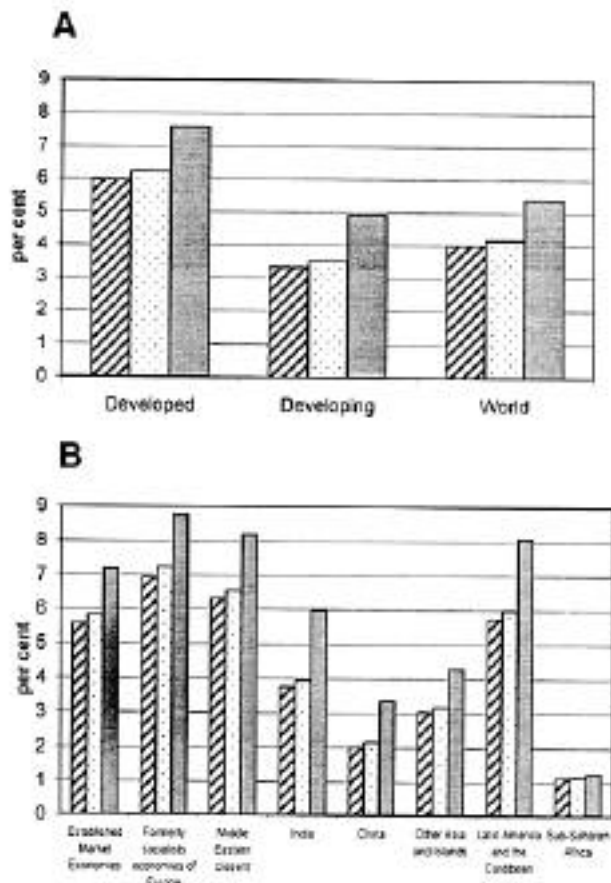
The rise in adult population size will be modest in the former socialist economies of Europe (FSE) (5%) and the established market economies (EME) (11%); moderate in China (39%);  $\sim 80\%$  in India, other Asia and islands (OAI), and Latin America and the Caribbean (LAC); and  $>100\%$  in sub-Saharan Africa (SSA) and the Middle Eastern crescent (MEC).

### Prevalence of diabetes

The prevalence of diabetes in adults aged  $\geq 20$  years is shown by year and region in Fig. 2. Between 1995 and 2025 there will be a 35% increase in the worldwide preva-



**Figure 1**—Size of the adult population (aged  $\geq 20$  years) by year and region: A: Developed and developing countries and world total; B: Major geographic areas.  $\square$ , 1995;  $\blacksquare$ , 2000;  $\blacklozenge$ , 2025.



**Figure 2**—Prevalence of diabetes in the adult population (aged 20 years) by year and region: A, Developed and developing countries and world total; B, Major geographic areas. ■, 1995; ▨, 2000; ■, 2025.

Prevalence of diabetes, from 4.0 to 5.4%. Prevalence is higher in developed than in developing countries and will remain so in 2025. However, the proportional increase will be greater in the developing countries. In developed countries, the increase in prevalence will be 27%, from 6.0 to 7.6%. In developing countries, the increase will be 48%, from 3.3 to 4.9%.

The highest increases in prevalence between 1995 and 2025 will be for China (68%) and India (59%). LAC and OAI will both experience a 41% increase, and MEC will experience a 30% increase. The increase will be lowest in FSE (26%) and EME (28%).

**Numerical estimates**

The number of adult people with diabetes is shown by year and region in Fig. 3. The number of adults with diabetes in the world is estimated to increase by 122%, from 135 million in 1995 to 300 million in 2025. There will be a 42% increase, from 51 million to 72 million, in the developed countries. In the developing countries,

there will be a 170% increase, from 84 million to 228 million. Thus, by the year 2025, over 75% of all people with diabetes will be in the developing countries, as compared with 62% in 1995.

The greatest increases will be seen in India (195%, from 19 million to 57 million), MEC (193%, from 18 million to 54 million), and SSA (185%, from 3 million to 8 million). The increase will be over 150% in OAI (from 12 million to 32 million) and LAC (from 15 million to 39 million). In China there will be a 134% increase (from 16 million to 38 million). The smallest increases will occur in FSE (33%, from 17 million to 22 million) and EME (46%, from 34 million to 50 million).

The “Top 10” countries of the world, in terms of the number of people with diabetes, are shown for 1995 and 2025 in Table 1. At both points in time, the three countries with the largest number of people with diabetes are India, China, and the U.S. For 1995, others in the Top 10 are the Russian Federation, Japan, Brazil, Indonesia, Pakistan, Mexico,

and the Ukraine. For 2025, the others in the Top 10 are Pakistan, Indonesia, Russian Federation, Mexico, Brazil, Egypt, and Japan. Thus, there will be a tendency for certain developing countries to move up the list and for certain industrialized countries to move down it. In both time periods, the Top 10 countries will account for approximately two-thirds of all diabetes in the world.

**Age structure of the diabetic population**

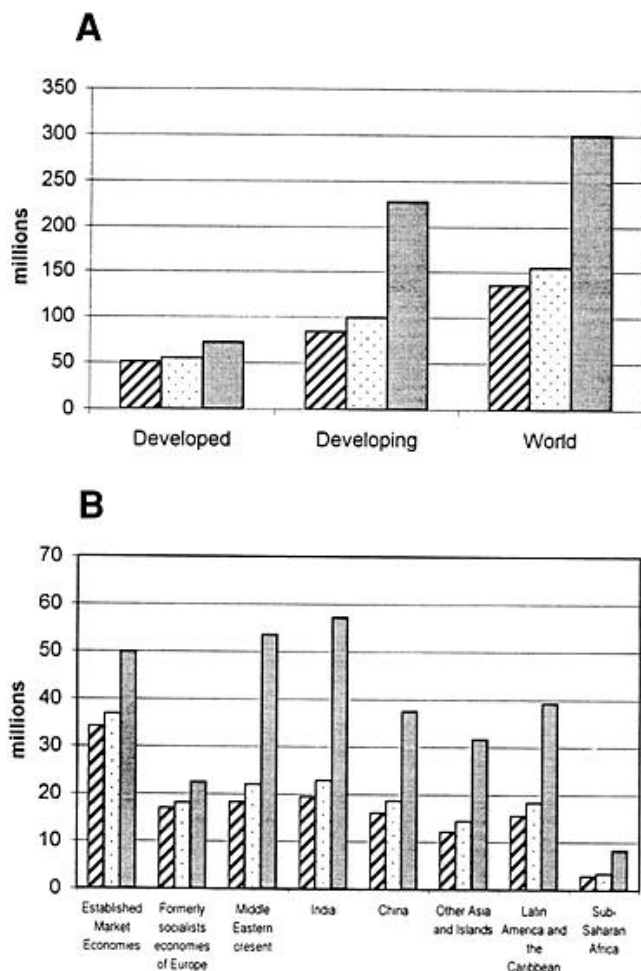
The number of diabetic subjects in three age ranges, i.e., 20–44 years, 45–64 years, and ≥65 years, is shown by region of the world for the years 1995 and 2025 in Fig. 4.

The age structure of the diabetic populations of developed and developing countries are markedly different. For the developed countries, the oldest age-group has the largest number of people with diabetes in 1995 and will experience the greatest increase in numbers by the year 2025. However, for the developing countries, the 45- to 64-year-old age-group contained the largest number of people with diabetes in 1995, and this tendency will be further accentuated by the year 2025. The age structure of the world total follows the trend for developing countries.

Regionally, three distinct patterns emerge. For SSA, the greatest numbers and the greatest increases are in the two younger age-groups, with only a small proportion of subjects in the oldest age range. For LAC, MEC, China, India, and OAI, the majority of people with diabetes are and will be in the middle age range. For EME and FSE, there are relatively few young people with diabetes, and the majority of people with diabetes are presently, and will be in 2025, over 65 years of age.

**Male/female diabetes ratio**

The ratio of the number of adult male and female people with diabetes is shown by year and region in Fig. 5. For 1995 for the world as a whole, there were more women than men with diabetes (73 vs. 62 million). The female excess is pronounced in the developed countries (31 vs. 20 million), but in the developing countries, there are equal numbers of men and women with diabetes (42 million in each case). Regionally, there is a marked female excess in FSE (12 million vs. 5 million) and LAC (9 vs. 6 million). There is a moderate female excess in EME (20 vs. 15 million) and China (9 vs. 7 million). There is approximate parity in the ratio in MEC (9 million in each case)



**Figure 3**—Number of people with diabetes in the adult population (aged 20 years) by year and region. A: Developed and developing countries and world total. B: Major geographic areas. ■, 1995; □, 2000; ▨, 2025.

and OAI (6 million in each case). There is a male excess in India (11 vs. 8 million) and in SSA (1.8 vs. 1.1 million).

By the year 2025, the worldwide female/male excess is estimated to be reduced somewhat (to 159 vs. 141 million). The female excess will decrease in FSE and EME but increase slightly in China, LAC, and MEC. The male excess will decrease in India, but it will increase in SSA.

#### Urban/rural diabetes ratio

For developing regions of the world, the study design permitted the calculation of the ratio of the frequency of diabetes in urban and rural areas (Fig. 6). Apart from China and SSA, all regions had at least as many cases in urban as in rural areas in 1995. By 2025, there will be a considerable excess of diabetes in the urban areas. The most extreme example is LAC (with a 12-fold excess), followed by MEC (with a 4-

fold excess) and India (with a 3-fold excess). For developing countries as a whole, the urban/rural ratio in diabetes fre-

quency is predicted to rise from 1.6 in 1995 to 3.3 in 2025.

**CONCLUSIONS** — The results of this study suggest that for the world as a whole, between the years 1995 and 2025, the adult population will increase by 64%, prevalence of diabetes in adults will increase by 35%, and the number of people with diabetes will increase by 122%. For the developed countries, there will be an 11% increase in the adult population, a 27% increase in the prevalence of adult diabetes, and a 42% increase in the number of people with diabetes. For the developing countries, there will be an 82% increase in the adult population, a 48% increase in the prevalence of adult diabetes, and a 170% increase in the number of people with diabetes.

Because of a lack of suitable survey data, many extrapolations were necessary in this study (all of SSA was estimated based on the data from Tanzania). Even when a survey in a particular country was available, its findings may not necessarily have been nationally representative (it is unlikely that there are three times as many men as women with diabetes in Australia and New Zealand; this result was due to a relatively high number of elderly diabetic men being identified in the only available Australian study).

Additional caution should be expressed over the fact that some of the studies were conducted in the 1980s and therefore may not reflect the current situation. Some recent reports have suggested quite substantial increases in prevalences in countries such as India (13) and Korea (14). A recent report from Nigeria (15), as well as clinical observation, also suggests that diabetes is

**Table 1**—Top ten countries for estimated number of adults with diabetes, 1995 and 2025

Rank	Country	1995 (millions)	Country	2025 (millions)
1	India	19.4	India	57.2
2	China	16.0	China	37.6
3	U.S.	13.9	U.S.	21.9
4	Russian Federation	8.9	Pakistan	14.5
5	Japan	6.3	Indonesia	12.4
6	Brazil	4.9	Russian Federation	12.2
7	Indonesia	4.5	Mexico	11.7
8	Pakistan	4.3	Brazil	11.6
9	Mexico	3.8	Egypt	8.8
10	Ukraine	3.6	Japan	8.5
	All other countries	49.7		103.6
	Total	135.3		300.0

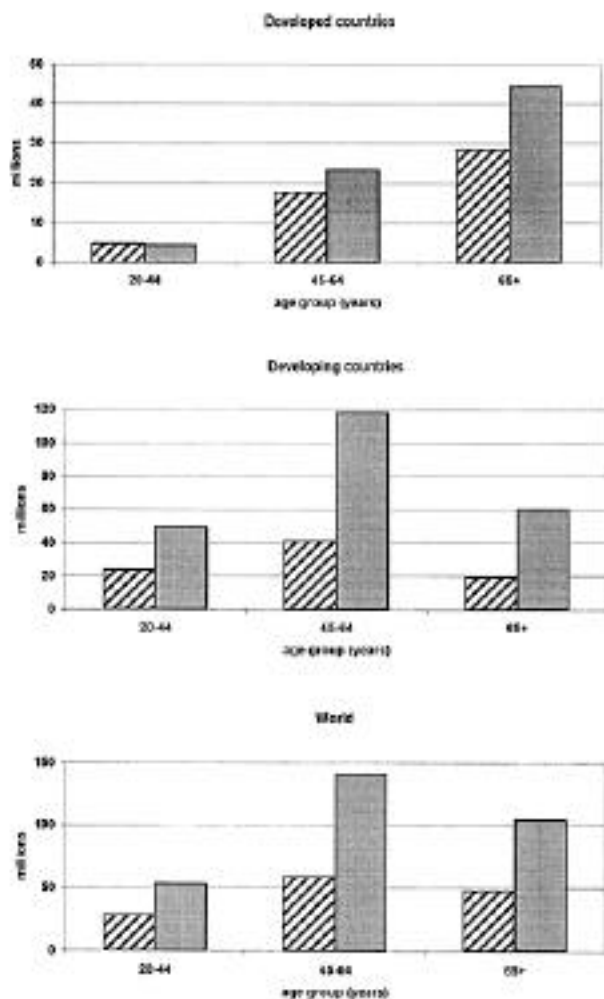


Figure 4—Number of people with diabetes by age-group, year, and region. ■, 1995; ▨, 2025.

now more common in SSA than was previously thought. Therefore, both national and regional figures for SSA may be underestimated.

For all of these reasons, too much emphasis should not be placed on the figures for individual countries. However, they do provide a useful starting point for national situational analysis.

Three previous studies have estimated the number of people with diabetes in the world. Although they used different sources of demographic data, they drew to a large extent on the same prevalence data as the present project, and estimates of current prevalence are quite comparable. It should be noted that all four studies have relied on field survey data for the estimation of prevalence. Therefore, the numerical estimates derived therefrom represent all people with diabetes in the community, including both known and undiagnosed cases.

As compared with our global estimate of

135 million adults with diabetes for 1995, Murray and Lopez (16) estimated 118 million cases at all ages for 1990. McCarty and Zimmet (17) estimated 110 million cases at all ages for 1994. Most recently, Amos et al. (18)—in a revision of the earlier McCarty and Zimmet report—estimated 118 million cases at all ages for 1995. Comparing the 1995 and 2000 country estimates of Amos et al. and the present study, in most cases there is good agreement, although there are a small number of important differences that bear further examination.

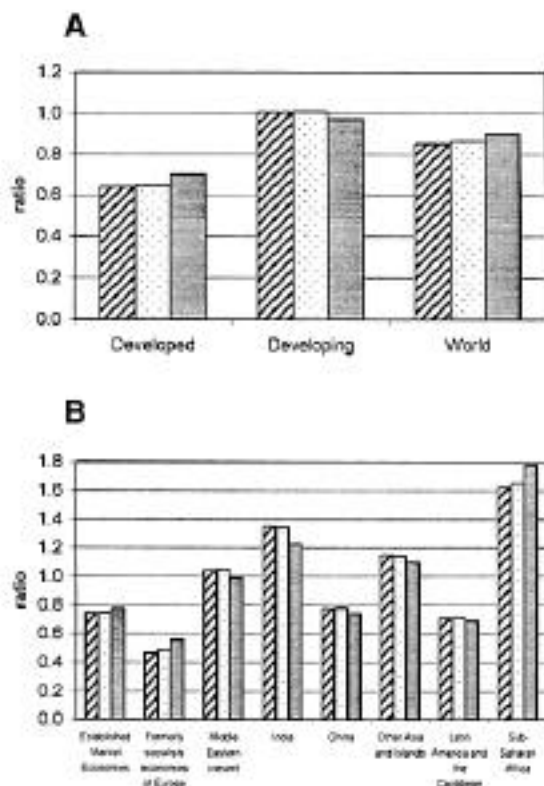
McCarty and Zimmet, and subsequently Amos et al., also attempted to make projections of diabetes frequency into the future. However, they did not incorporate projected changes in patterns of urbanization directly into their models, as was done in the present study. Instead, they hypothesized that in general, populations would move toward progressively higher prevalences of diabetes in the future. They first

examined all available prevalence rates for an ethnic group, and then for each country, they selected the “most appropriate” higher rate based on predicted future gross national product and urbanization of each country. The higher age-specific prevalence estimates were then applied to a projected national age distribution. Using this procedure, Amos et al. estimated a world total of 147 million cases for the year 2000 (as compared with our estimate of 154 million) and 221 million cases for the year 2010. Thus, the projections of Amos et al. yield an average annual increment to the world’s diabetic population of 5.8 million people for the years 1995–1999 and of 7.4 million people for the years 2000–2010. Our apparently more conservative approach yields an average annual growth of the world’s diabetic population of 3.8 million people for the years 1995–1999 (starting from a higher 1995 baseline figure) and of 5.8 million people for the years 2000–2025. These alternatives, essentially the result of adopting “pessimistic” or “optimistic” scenarios, probably form useful boundaries for the likely burden of diabetes during the first years of the 21st century. Thus, they may be viewed as complementary to one another.

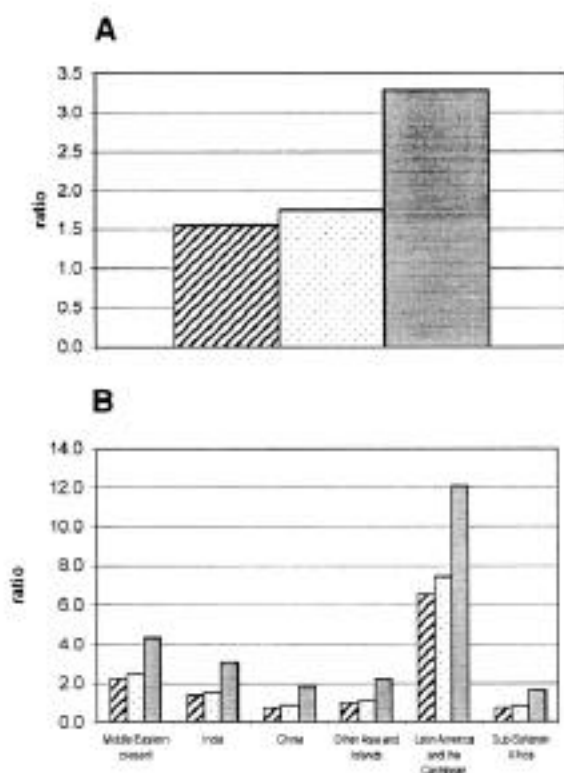
The failure to include subjects <20 years of age in the present study should not be taken as ignoring the importance and severity of diabetes in childhood and adolescence. It is simply a reflection of the fact that their inclusion would have had little effect on the numerical estimates. Of the 118 million cases estimated by Murray and Lopez for 1990, only 214,000, or 0.2%, were <15 years of age. This suggests that frequency of diabetes in adults is a close and efficient proxy for global frequency of diabetes at all ages.

The division of countries into “developed” and “developing” groups is somewhat arbitrary and is unduly simplistic, given that many developing countries have complex infrastructures and considerable economic potential. However, it does serve to differentiate those countries that have been industrialized for some time from the newly emerging economies and those yet to experience such changes. Clearly, there are close links between socioeconomic transition and epidemiological transition.

The much greater predicted number of middle-aged (45–64 years) than elderly (≥65 years) people with diabetes in the developing countries is important. Such subjects will have to endure the condition during some of the most productive years



**Figure 5**—Male/female ratio of number of people with diabetes by year and region. A: Developed and developing countries and world total. B: Major geographic areas. 1995, 2000, 2025.



**Figure 6**—Urban/rural ratio of number of people with diabetes by year and region. A: Developing countries. B: Major geographic areas. 1995, 2000, 2025.

of their lives. They will also have more years of life to develop the chronic complications of diabetes than will the generally elderly diabetic population of the industrialized countries. This will have major implications with respect to health care needs, resource utilization, and cost.

The fact that there are more women than men with diabetes in many countries is also notable. For the developed countries, a likely explanation is the greater longevity of women. However, in the developing countries, diabetes is more common in the middle-aged than the elderly (Fig. 4), under which circumstances the previous explanation is less likely. In this case, it may be differential distribution of risk factors—especially diet, physical inactivity, and central obesity—in men and women that may determine the male/female ratio. If so, the ratio may have public health, as well as health planning, significance.

The increasing concentration of diabetes in urban areas of developing countries, which may be largely accounted for by the rapid growth in size of the major urban conglomerates of developing countries, as well as by the aging of their populations, should also be borne in mind when planning future health care systems.

In summary, this report supports earlier predictions of the epidemic nature of diabetes in the world during the first quarter of the 21st century. It also provides a provisional picture of the characteristics of the epidemic. The database is a contribution to an ongoing process of worldwide surveillance of diabetes, its complications, and related disorders, which recently led the WHO to recommend prevalence of diabetes as one of the “basic health indicators” for its member states (19). Such surveillance is a first step toward the integrated prevention and control of diabetes and other noncommunicable diseases, which is now recognized as an urgent priority for national and international health authorities (20).

**Acknowledgments**— This project was conceived as a joint collaboration between the WHO diabetes program and the Division of Diabetes Translation, Centers for Disease Control and Prevention, Atlanta, Georgia, during the period of employment of R.E.A. and W.H.H. in the Division of Diabetes Translation, Centers for Disease Control and Prevention.

The authors thank the members of the WHO Ad Hoc Diabetes Reporting Group who supplied the survey data used in this study.

Appendix 1—Description of survey data used for the calculation of country estimates

Country	Urban prevalence	Rural prevalence	Ref.	Country	Urban prevalence	Rural prevalence	Ref.	Country	Urban prevalence	Rural prevalence	Ref.
<b>EME</b>											
Australia	Australia	Australia	21	United Arab Emirates	Oman	Oman × 0.5	31	Jamaica	St. James	St. James × 0.5	36
Austria	U.K.	U.K.	22,23	Uzbekistan	Uzbekistan	Uzbekistan	8	Martinique	St. James	St. James × 0.5	36
Belgium	U.K.	U.K.	22,23		Uzbekistan × 1.5			Mexico	Mexico City	Mexico City × 0.5	39
Canada	Hanes: U.S.	Hanes: U.S.	24,25	Yemen	Cairo × 0.5	Kaliubia × 0.5	29	Neth. Antilles	St. James	St. James × 0.5	36
Denmark	Finland	Finland	26	India	India, urban	India, rural	33	Nicaragua	Bogota	Bogota × 0.5	37
Finland	Finland	Finland	26	China	China, urban	China, rural	4	Panama	Bogota	Bogota × 0.5	37
France	U.K.	U.K.	22,23	OAI				Paraguay	Bogota	Bogota × 0.5	37
Germany	U.K.	U.K.	22,23	Bangladesh	Bangkok	Bangkok × 0.5	34	Peru	Bogota	Bogota × 0.5	37
Greece	Sanza, Italy	Sanza, Italy	27	Bhutan	Bangkok	Bangkok × 0.5	34	Puerto Rico	St. James	St. James × 0.5	36
Ireland	U.K.	U.K.	22,23	Brunei	Bangkok	Bangkok × 0.5	34	St. Kitts and Nevis	St. James	St. James × 0.5	36
Italy	Sanza, Italy	Sanza, Italy	27	Darussalam				St. Lucia	St. James	St. James × 0.5	36
Japan	Japan	Japan	6	Cambodia	Bangkok	Bangkok × 0.5	34	St. Vincent and the Grenadines	St. James	St. James × 0.5	36
Netherlands	U.K.	U.K.	22,23	Cook Islands	Fiji	Fiji × 0.5	35	Suriname	St. James	St. James × 0.5	36
New Zealand	Australia	Australia	21	Democratic People's Republic of Korea	Bangkok	Bangkok × 0.5	34	Trinidad and Tobago	St. James	St. James × 0.5	36
Norway	Finland	Finland	26	East Timor	Bangkok	Bangkok × 0.5	34	Uruguay	Bogota	Bogota × 0.5	37
Portugal	Sanza, Italy	Sanza, Italy	27	Fiji	Fiji	Fiji × 0.5	35	Venezuela	Bogota	Bogota × 0.5	37
Spain	Sanza, Italy	Sanza, Italy	27	Hong Kong	Bangkok	Bangkok × 0.5	34	<b>SSA</b>			
Sweden	Finland	Finland	26	Indonesia	Indonesia	Indonesia × 0.5	5	Angola	Dar-es-Salaam	Waluguru	40
Switzerland	U.K.	U.K.	22,23	Kiribati	Fiji	Fiji × 0.5	35	Benin	Dar-es-Salaam	Waluguru	40
U.K.	U.K.	U.K.	22,23	Lao People's Democratic Republic	Bangkok	Bangkok × 0.5	34	Botswana	Dar-es-Salaam	Waluguru	40
U.S.	Hanes: U.S.	Hanes: U.S.	24,25	Malaysia	Bangkok	Bangkok × 0.5	34	Burkina Faso	Dar-es-Salaam	Waluguru	40
<b>FSE</b>											
Albania	Wroclaw	Wroclaw	28	Maldives	Bangkok	Bangkok × 0.5	34	Burundi	Dar-es-Salaam	Waluguru	40
Belarus	Novosibirsk	Novosibirsk	*	Marshall Islands	Fiji	Fiji × 0.5	35	Cameroon	Dar-es-Salaam	Waluguru	40
Bulgaria	Wroclaw	Wroclaw	28	Micronesia	Fiji	Fiji × 0.5	35	Cape Verde	Dar-es-Salaam	Waluguru	40
Czech Republic	Wroclaw	Wroclaw	28	Mongolia	Bangkok	Bangkok × 0.5	34	Central African Republic	Dar-es-Salaam	Waluguru	40
Hungary	Wroclaw	Wroclaw	28	Myanmar	Bangkok	Bangkok × 0.5	34	Chad	Dar-es-Salaam	Waluguru	40
Lithuania	Wroclaw	Wroclaw	28	Nauru	Fiji	Fiji × 0.5	35	Comoros	Dar-es-Salaam	Waluguru	40
Poland	Wroclaw	Wroclaw	28	Nepal	Bangkok	Bangkok × 0.5	34	Congo	Dar-es-Salaam	Waluguru	40
Republic of Moldova	Wroclaw	Wroclaw	28	Niue	Fiji	Fiji × 0.5	35	Côte d'Ivoire	Dar-es-Salaam	Waluguru	40
Romania	Novosibirsk	Novosibirsk	*	Papua New Guinea	Fiji	Fiji × 0.5	35	Djibouti	Dar-es-Salaam	Waluguru	40
Russian Federation	Novosibirsk	Novosibirsk	*	Philippines	Bangkok	Bangkok × 0.5	34	Equatorial Guinea	Dar-es-Salaam	Waluguru	40
Slovakia	Wroclaw	Wroclaw	28	Republic of Korea	Bangkok	Bangkok × 0.5	34	Eritrea	Dar-es-Salaam	Waluguru	40
Ukraine	Novosibirsk	Novosibirsk	*	Samoa	Fiji	Fiji × 0.5	35	Ethiopia	Dar-es-Salaam	Waluguru	40
Yugoslavia	Wroclaw	Wroclaw	28	Singapore	Bangkok	Bangkok × 0.5	34	Gabon	Dar-es-Salaam	Waluguru	40
<b>MEC</b>											
Afghanistan	Cairo × 0.5	Baluchistan × 0.5	29,7	Solomon Islands	Fiji	Fiji × 0.5	35	Gambia	Dar-es-Salaam	Waluguru	40
Algeria	Tunisia	Tunisia × 0.5	30	Sri Lanka	Bangkok	Bangkok × 0.5	34	Ghana	Dar-es-Salaam	Waluguru	40
Armenia	Cairo × 0.5	Baluchistan × 0.5	29,7	Thailand	Bangkok	Bangkok × 0.5	34	Guinea	Dar-es-Salaam	Waluguru	40
Azerbaijan	Cairo × 0.5	Baluchistan × 0.5	29,7	Tonga	Fiji	Fiji × 0.5	35	Guinea-Bissau	Dar-es-Salaam	Waluguru	40
Bahrain	Oman	Oman × 0.5	31	Tuvalu	Fiji	Fiji × 0.5	35	Kenya	Dar-es-Salaam	Waluguru	40
Bahrain	Oman	Oman × 0.5	31	Vanuatu	Fiji	Fiji × 0.5	35	Lesotho	Dar-es-Salaam	Waluguru	40
Cyprus	Cairo	Kaliubia	29	Vietnam	Bangkok	Bangkok × 0.5	34	Liberia	Dar-es-Salaam	Waluguru	40
Egypt	Cairo	Kaliubia	29	<b>LAC</b>				Madagascar	Dar-es-Salaam	Waluguru	40
Georgia	Cairo × 0.5	Baluchistan × 0.5	29,7	Antigua and Barbuda	St. James	St. James × 0.5	36	Malawi	Dar-es-Salaam	Waluguru	40
Iran	Cairo × 0.5	Kaliubia × 0.5	29	Argentina	Bogota	Bogota × 0.5	37	Mali	Dar-es-Salaam	Waluguru	40
Islamic Republic of Iraq	Cairo × 0.5	Kaliubia × 0.5	29	Bahamas	St. James	St. James × 0.5	36	Mauritania	Dar-es-Salaam	Waluguru	40
Israel	Israel	Israel	32	Barbados	St. James	St. James × 0.5	36	Mauritius	Dar-es-Salaam	Waluguru	40
Jordan	Cairo	Kaliubia	29	Belize	Bogota	Bogota × 0.5	37	Mozambique	Dar-es-Salaam	Waluguru	40
Kazakhstan	Uzbekistan × 1.5	Uzbekistan	8	Bolivia	Bogota	Bogota × 0.5	37	Namibia	Dar-es-Salaam	Waluguru	40
Kuwait	Oman	Oman × 0.5	31	Brazil	Sao Paulo	Sao Paulo × 0.5	38	Niger	Dar-es-Salaam	Waluguru	40
Kyrgyzstan	Uzbekistan × 1.5	Uzbekistan × 0.5	8	Chile	Bogota	Bogota × 0.5	37	Nigeria	Dar-es-Salaam	Waluguru	40
Lebanon	Cairo	Kaliubia	29	Colombia	Bogota	Bogota × 0.5	37	Reunion	Dar-es-Salaam	Waluguru	40
Libyan Arab Jamahiriya	Tunisia	Tunisia × 0.5	30	Costa Rica	Bogota	Bogota × 0.5	37	Rwanda	Dar-es-Salaam	Waluguru	40
Morocco	Tunisia	Tunisia × 0.5	30	Cuba	St. James	St. James × 0.5	36	Sao Tome and Principe	Dar-es-Salaam	Waluguru	40
Oman	Oman	Oman × 0.5	31	Dominica	St. James	St. James × 0.5	36	Senegal	Dar-es-Salaam	Waluguru	40
Pakistan	Pakistan	Pakistan × 0.5	7	Dominican Republic	St. James	St. James × 0.5	36	Seychelles	Dar-es-Salaam	Waluguru	40
Qatar	Oman	Oman × 0.5	31	Ecuador	Bogota	Bogota × 0.5	37	Sierra Leone	Dar-es-Salaam	Waluguru	40
Saudi Arabia	Oman	Oman × 0.5	31	El Salvador	Bogota	Bogota × 0.5	37	Somalia	Dar-es-Salaam	Waluguru	40
Syria	Cairo	Kaliubia	29	Grenada	St. James	St. James × 0.5	36	South Africa	Dar-es-Salaam	Waluguru	40
Tajikistan	Uzbekistan × 1.5	Uzbekistan × 0.5	8	Guadeloupe	St. James	St. James × 0.5	36	Sudan	Dar-es-Salaam	Waluguru	40
Tunisia	Tunisia	Tunisia × 0.5	30	Guatemala	Bogota	Bogota × 0.5	37	Swaziland	Dar-es-Salaam	Waluguru	40
Turkey	Tunisia	Tunisia × 0.5	30	Guyana	St. James	St. James × 0.6	36	Togo	Dar-es-Salaam	Waluguru	40
Turkmenistan	Uzbekistan × 1.5	Uzbekistan	8	Haiti	St. James	St. James × 0.5	36	Uganda	Dar-es-Salaam	Waluguru	40
				Honduras	St. James	St. James × 0.5	36	United Republic of Tanzania	Dar-es-Salaam	Waluguru	40
								Zaire	Dar-es-Salaam	Waluguru	40
								Zambia	Dar-es-Salaam	Waluguru	40
								Zimbabwe	Dar-es-Salaam	Waluguru	40

Personally communicated data: \*E. Shubnikov.

## Appendix 2—Population size, prevalence of diabetes, and number of people with diabetes in adults aged 20 years and over—1995, 2000, and 2025

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20–44	45–64	≥65	
<b>World</b>										
1995	3,397,604	4.0	—	—	62,130	73,156	28,642	58,747	47,851	135,286
2000	3,719,551	4.2	—	—	71,470	82,922	32,608	67,899	53,832	154,392
2025	5,572,260	5.4	—	—	141,936	158,037	53,874	141,418	104,599	299,974
<b>Developed countries</b>										
1995	856,952	5.9	—	—	19,880	31,094	4,794	17,639	28,536	50,974
2000	883,442	6.2	—	—	21,544	33,266	4,878	19,149	30,777	54,810
2025	953,703	7.6	—	—	29,765	42,484	4,420	23,378	44,445	72,248
<b>Developing countries</b>										
1995	2,540,652	3.3	33,051	51,220	42,250	42,062	23,848	41,108	19,315	84,313
2000	2,836,109	3.5	36,215	63,320	49,925	49,657	27,730	48,749	23,055	99,582
2025	4,618,557	4.9	53,176	174,472	112,171	115,554	49,454	118,041	60,154	227,725
<b>Established market economies</b>										
1995	612,477	5.6	—	—	14,507	19,546	3,830	13,663	16,555	34,054
2000	633,575	5.8	—	—	15,669	21,074	3,941	14,986	17,811	36,743
2025	697,518	7.1	—	—	21,752	28,075	3,568	18,699	27,554	49,826
<b>Andorra</b>										
1995	44	7.1	—	—	1.5	1.6	—	—	—	3.1
2000	46	7.1	—	—	1.6	1.7	—	—	—	3.3
2025	47	7.0	—	—	1.6	1.7	—	—	—	3.3
<b>Australia</b>										
1995	12,939	2.5	—	—	241	88	47	122	161	330
2000	13,858	2.7	—	—	269	98	49	142	176	367
2025	18,374	3.3	—	—	466	144	53	219	339	610
<b>Austria</b>										
1995	6,085	2.0	—	—	54	69	6.2	49	68	123
2000	6,230	2.1	—	—	59	71	6.9	54	69	130
2025	6,523	2.7	—	—	88	91	5.2	74	99	178
<b>Belgium</b>										
1995	7,688	2.1	—	—	75	88	8.1	65	90	164
2000	7,837	2.2	—	—	79	92	8.3	67	95	171
2025	8,077	2.7	—	—	105	116	6.4	84	130	221
<b>Canada</b>										
1995	21,391	7.2	—	—	651	882	239	651	643	1,532
2000	22,609	7.5	—	—	723	978	248	753	701	1,701
2025	28,551	9.2	—	—	1,154	1,464	238	1,039	1,341	2,618
<b>Denmark</b>										
1995	3,972	8.3	—	—	141	189	10	81	238	329
2000	3,999	8.4	—	—	144	191	10	90	235	335
2025	3,963	10.8	—	—	188	240	7.9	103	318	428
<b>Finland</b>										
1995	3,805	7.9	—	—	118	182	11	80	210	300
2000	3,899	8.3	—	—	130	192	10	89	222	322
2025	4,082	11.1	—	—	193	261	8.9	94	350	454
<b>France</b>										
1995	42,750	2.1	—	—	399	482	46	347	488	881
2000	44,027	2.1	—	—	425	510	46	366	524	935
2025	47,154	2.6	—	—	569	665	40	464	731	1,234
<b>Germany</b>										
1995	63,974	2.1	—	—	610	749	64	585	710	1,359
2000	64,595	2.2	—	—	661	773	69	613	752	1,434
2025	63,008	2.8	—	—	856	914	51	734	986	1,770
<b>Greece</b>										
1995	7,963	7.6	—	—	262	345	67	239	300	607
2000	8,291	7.8	—	—	276	374	70	238	342	650
2025	8,069	9.6	—	—	317	455	56	276	440	772
<b>Iceland</b>										
1995	183	7.0	—	—	6.2	6.6	0.6	3.1	9.1	13
2000	197	7.2	—	—	6.4	7.8	0.6	3.5	10	14
2025	248	9.3	—	—	11	12	0.6	5.7	17	23
<b>Ireland</b>										
1995	2,345	1.8	—	—	21	22	3	18	22	43
2000	2,488	1.8	—	—	22	24	3	20	23	46
2025	2,842	2.3	—	—	32	34	3	28	36	66
<b>Italy</b>										
1995	44,863	7.5	—	—	1,414	1,956	377	1,291	1,702	3,369
2000	45,885	7.8	—	—	1,489	2,103	399	1,311	1,882	3,592
2025	43,757	10.0	—	—	1,747	2,618	265	1,595	2,505	4,365
<b>Japan</b>										
1995	96,163	6.5	—	—	2,684	3,585	465	2,817	2,987	6,269
2000	99,631	6.9	—	—	2,949	3,956	442	2,955	3,508	6,905
2025	98,404	8.7	—	—	3,601	4,942	375	2,837	5,331	8,543
<b>Luxembourg</b>										
1995	314	2.0	—	—	2.9	3.4	0.3	2.7	3.2	6.2
2000	329	2.1	—	—	3.1	3.6	0.4	2.9	3.5	6.8
2025	341	2.7	—	—	4.4	4.9	0.3	3.7	5.3	9.3
<b>Malta</b>										
1995	259	1.8	—	—	2.2	2.5	0.3	2.2	2.3	4.8
2000	272	1.9	—	—	2.5	2.8	0.3	2.4	2.6	5.3
2025	314	2.5	—	—	3.8	4.0	0.3	2.9	4.5	7.7
<b>Monaco</b>										
1995	24	2.1	—	—	0.2	0.3	—	—	—	0.5
2000	25	2.1	—	—	0.2	0.3	—	—	—	0.5
2025	26	2.1	—	—	0.2	0.3	—	—	—	0.5

# Global burden of diabetes

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							
			Rural	Urban	Male	Female	Age (years)			Total
							20-44	45-64	≥65	
<b>Netherlands</b>										
1995	11,730	1.9	—	—	104	119	13	94	116	222
2000	12,085	2.0	—	—	115	127	13	106	123	242
2025	12,898	2.7	—	—	172	182	10.0	141	203	354
<b>New Zealand</b>										
1995	2,476	2.5	—	—	46	17	8.8	23	31	63
2000	2,619	2.6	—	—	50	19	9.3	26	33	68
2025	3,227	3.2	—	—	78	25	9.1	38	56	103
<b>Norway</b>										
1995	3,225	8.6	—	—	117	159	8.7	59	209	276
2000	3,269	8.6	—	—	119	161	8.9	66	205	280
2025	3,550	10.2	—	—	160	203	7.5	87	269	363
<b>Portugal</b>										
1995	7,198	7.1	—	—	213	300	64	194	255	513
2000	7,398	7.3	—	—	222	316	68	198	272	538
2025	7,630	8.8	—	—	280	394	56	266	352	674
<b>San Marino</b>										
1995	20	7.6	—	—	0.6	0.9	—	—	—	1.5
2000	21	7.6	—	—	0.6	0.9	—	—	—	1.6
2025	20	7.6	—	—	0.6	0.9	—	—	—	1.5
<b>Spain</b>										
1995	29,954	7.2	—	—	914	1,242	262	804	1,091	2,156
2000	31,374	7.3	—	—	970	1,333	285	808	1,210	2,303
2025	31,213	9.5	—	—	1,244	1,709	205	1,163	1,584	2,952
<b>Sweden</b>										
1995	6,608	9.3	—	—	265	350	16	134	464	614
2000	6,683	9.4	—	—	272	360	17	150	465	631
2025	7,380	11.2	—	—	372	456	16	168	644	827
<b>Switzerland</b>										
1995	5,532	2.0	—	—	50	59	5.9	46	58	109
2000	5,718	2.1	—	—	55	63	6.4	50	61	118
2025	6,105	2.8	—	—	84	86	4.6	68	98	170
<b>U.K.</b>										
1995	43,365	2.1	—	—	419	493	43	359	510	912
2000	43,784	2.1	—	—	434	500	46	380	508	934
2025	46,756	2.5	—	—	564	622	40	491	655	1,186
<b>U.S.</b>										
1995	187,607	7.4	—	—	5,697	8,156	2,066	5,599	6,188	13,853
2000	196,407	7.6	—	—	6,192	8,817	2,126	6,496	6,387	15,009
2025	244,959	8.9	—	—	9,462	12,430	2,112	8,720	11,060	21,892
<b>Formerly socialist economies of Europe</b>										
1995	244,475	6.9	—	—	5,373	11,547	964	3,975	11,980	16,920
2000	249,867	7.2	—	—	5,875	12,192	937	4,163	12,966	18,067
2025	256,185	8.8	—	—	8,013	14,409	852	4,679	16,892	22,422
<b>Albania</b>										
1995	2,040	2.8	—	—	23	34	7.4	31	19	58
2000	2,215	2.9	—	—	26	39	8.6	35	22	65
2025	3,323	3.9	—	—	53	78	11	71	49	131
<b>Belarus</b>										
1995	7,216	8.9	—	—	209	432	30	104	507	641
2000	7,313	9.5	—	—	233	463	30	101	564	696
2025	7,509	11.4	—	—	311	543	27	120	707	854
<b>Bosnia and Herzegovina</b>										
1995	2,437	3.4	—	—	31	51	9.5	45	28	82
2000	3,138	3.6	—	—	42	71	12	59	43	114
2025	3,474	5.0	—	—	64	109	10	84	78	172
<b>Bulgaria</b>										
1995	6,509	4.4	—	—	102	183	20	139	127	286
2000	6,532	4.4	—	—	101	190	19	136	136	290
2025	6,150	5.0	—	—	103	207	17	140	153	311
<b>Croatia</b>										
1995	3,323	4.4	—	—	51	94	11	72	62	145
2000	3,341	4.5	—	—	52	98	10	71	69	150
2025	3,269	5.1	—	—	55	112	9.4	73	85	167
<b>Czech Republic</b>										
1995	7,424	4.1	—	—	105	202	25	146	136	307
2000	7,641	4.1	—	—	112	202	23	160	131	314
2025	7,936	4.7	—	—	129	244	22	178	174	373
<b>Estonia</b>										
1995	1,106	4.4	—	—	15	34	3.7	23	22	49
2000	1,101	4.4	—	—	15	34	3.6	23	23	49
2025	1,087	5.0	—	—	17	37	3.4	24	27	55
<b>Hungary</b>										
1995	7,459	4.4	—	—	107	220	25	152	150	326
2000	7,515	4.4	—	—	107	223	22	155	152	329
2025	7,141	4.9	—	—	111	241	19	155	178	352
<b>Latvia</b>										
1995	1,859	4.5	—	—	25	58	6.0	39	38	83
2000	1,821	4.6	—	—	25	59	6.0	38	40	84
2025	1,771	5.0	—	—	27	62	5.5	39	45	89
<b>Lithuania</b>										
1995	2,631	4.2	—	—	34	76	8.6	52	49	110
2000	2,658	4.3	—	—	35	79	9.1	51	54	115
2025	2,802	4.9	—	—	43	93	8.4	62	67	137

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Poland</b>										
1995	26,403	3.9	—	—	353	688	100	493	449	1,041
2000	27,498	4.0	—	—	375	729	94	525	484	1,103
2025	30,483	4.7	—	—	472	953	97	614	714	1,425
<b>Republic of Moldova</b>										
1995	2,893	3.7	—	—	36	71	11	52	43	107
2000	3,013	3.7	—	—	37	75	11	55	46	113
2025	3,645	4.2	—	—	52	102	12	72	70	154
<b>Romania</b>										
1995	16,239	4.0	—	—	238	416	54	328	272	654
2000	16,742	4.0	—	—	238	437	52	324	299	675
2025	16,992	4.8	—	—	292	526	50	393	375	817
<b>Russian Federation</b>										
1995	105,326	8.4	—	—	2,693	6,201	456	1,469	6,969	8,894
2000	106,994	9.0	—	—	3,013	6,566	443	1,551	7,586	9,579
2025	107,169	11.4	—	—	4,407	7,832	381	1,715	10,144	12,240
<b>Slovakia</b>										
1995	3,656	3.8	—	—	46	92	13	65	60	138
2000	3,854	3.8	—	—	49	98	13	71	64	148
2025	4,399	4.6	—	—	68	134	13	94	95	202
<b>Slovenia</b>										
1995	1,439	4.3	—	—	21	40	4.8	30	26	61
2000	1,486	4.4	—	—	22	43	4.6	31	30	65
2025	1,457	5.3	—	—	25	52	4.0	34	38	77
<b>The Former Yugoslav Republic of Macedonia</b>										
1995	1,457	3.4	—	—	20	30	5.4	27	17	50
2000	1,561	3.6	—	—	22	34	5.5	30	21	56
2025	1,894	4.6	—	—	32	55	5.8	42	39	87
<b>Ukraine</b>										
1995	37,423	9.6	—	—	1,146	2,430	148	546	2,881	3,576
2000	37,777	10.1	—	—	1,254	2,548	147	591	3,063	3,801
2025	37,234	11.8	—	—	1,612	2,778	131	591	3,667	4,389
<b>Yugoslavia</b>										
1995	7,635	4.1	—	—	117	194	26	161	124	311
2000	7,667	4.2	—	—	117	203	24	156	141	320
2025	8,450	4.6	—	—	139	252	25	179	187	391
<b>The Middle Eastern Crescent</b>										
1995	290,043	6.3	5,725	12,575	9,332	8,968	6,680	8,413	3,207	18,300
2000	335,553	6.5	6,317	15,648	11,245	10,720	7,899	10,201	3,864	21,964
2025	653,472	8.2	9,999	43,550	26,703	26,845	16,247	26,782	10,520	53,549
<b>Afghanistan</b>										
1995	9,993	4.1	276	136	200	212	174	183	55	412
2000	13,619	4.1	364	196	272	287	257	230	72	559
2025	25,134	5.3	575	748	596	727	456	659	208	1,323
<b>Algeria</b>										
1995	13,923	4.3	173	433	330	276	207	273	125	606
2000	16,557	4.6	165	599	424	340	265	344	154	764
2025	30,966	6.3	295	1,642	993	944	474	1,041	422	1,937
<b>Armenia</b>										
1995	2,229	6.9	35	120	61	94	49	66	39	155
2000	2,422	7.3	36	141	72	105	55	74	48	177
2025	3,361	8.9	37	261	111	187	68	135	95	298
<b>Azerbaijan</b>										
1995	4,473	6.4	65	220	112	173	100	120	64	285
2000	4,881	6.7	67	259	132	194	116	127	82	325
2025	7,168	8.7	77	549	234	392	147	309	170	627
<b>Bahrain</b>										
1995	339	8.4	2.3	26	17	11	13	12	3.5	29
2000	383	9.6	2.8	34	22	15	14	18	4.5	37
2025	658	12.8	4.2	80	46	38	17	41	27	84
<b>Cyprus</b>										
1995	495	13.1	16	48	25	40	18	31	16	65
2000	521	14.2	17	58	29	45	20	36	18	74
2025	678	17.4	16	102	44	74	24	54	40	118
<b>Egypt</b>										
1995	32,655	9.9	962	2,278	1,428	1,811	1,283	1,442	515	3,240
2000	37,255	10.2	1,081	2,720	1,679	2,122	1,448	1,744	609	3,801
2025	66,125	13.3	1,592	7,211	3,756	5,046	2,706	4,229	1,867	8,802
<b>Georgia</b>										
1995	3,745	7.8	66	227	105	188	71	130	91	293
2000	3,851	8.1	63	247	113	197	76	134	101	310
2025	4,464	9.3	51	363	147	267	82	189	144	414
<b>Iraq</b>										
1995	9,394	6.0	58	504	246	315	228	248	85	561
2000	11,140	6.1	64	614	297	381	271	302	105	678
2025	24,677	7.0	104	1,635	739	1,001	605	820	314	1,739
<b>Islamic Republic of Iran</b>										
1995	30,669	5.5	318	1,374	739	953	668	706	318	1,692
2000	34,966	5.7	324	1,653	858	1,119	780	809	388	1,977
2025	76,814	6.8	543	4,672	2,221	2,994	1,843	2,352	1,020	5,215
<b>Israel</b>										
1995	3,486	8.5	17	280	151	145	26	124	147	297
2000	3,843	8.5	16	310	168	159	27	143	157	327
2025	5,564	10.2	19	547	296	270	37	243	286	566

# Global burden of diabetes

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Jordan</b>										
1995	2,472	11.0	33	239	118	154	111	121	41	272
2000	2,986	11.3	36	302	149	189	146	139	53	338
2025	6,842	13.8	63	881	401	543	324	472	148	944
<b>Kazakhstan</b>										
1995	10,463	4.7	194	292	241	246	67	261	159	487
2000	11,176	4.8	196	338	265	268	72	292	169	533
2025	15,408	5.8	220	681	462	439	87	483	330	901
<b>Kuwait</b>										
1995	765	8.0	5.0	56	28	32	27	27	6.3	61
2000	992	8.7	6.7	80	42	44	34	44	8.5	86
2025	1,912	12.4	12	226	115	123	55	117	66	237
<b>Kyrgyzstan</b>										
1995	2,528	4.2	74	33	53	54	16	55	36	107
2000	2,810	4.2	78	40	59	59	18	59	40	118
2025	4,853	4.9	113	126	127	111	29	135	74	239
<b>Lebanon</b>										
1995	1,690	13.7	13	219	88	144	81	99	52	232
2000	1,895	13.8	12	251	100	163	93	110	60	262
2025	3,086	18.0	14	541	205	350	138	295	122	555
<b>Libyan Arab Jamahiriya</b>										
1995	2,389	5.3	11	115	77	49	42	64	21	126
2000	2,855	5.4	11	142	92	61	49	77	27	153
2025	6,783	5.7	17	368	212	173	121	183	81	385
<b>Morocco</b>										
1995	14,233	4.3	211	397	323	285	205	275	128	608
2000	16,599	4.4	238	491	387	342	246	335	148	729
2025	28,183	6.2	383	1,364	866	881	403	929	416	1,747
<b>Oman</b>										
1995	920	6.5	29	30	31	28	21	29	9.9	59
2000	1,114	6.7	33	42	39	35	25	38	12	75
2025	2,918	7.4	59	158	108	109	74	98	45	217
<b>Pakistan</b>										
1995	64,494	6.7	2,159	2,179	2,628	1,710	1,835	2,079	425	4,338
2000	75,111	7.1	2,473	2,837	3,208	2,102	2,178	2,625	507	5,310
2025	166,975	8.7	4,229	10,294	8,669	5,853	5,236	7,635	1,652	14,523
<b>Qatar</b>										
1995	362	9.4	2.6	31	25	8.5	15	17	1.4	34
2000	397	11.1	3.4	40	33	11	14	27	3.1	44
2025	551	13.6	3.8	71	47	28	13	30	32	75
<b>Saudi Arabia</b>										
1995	8,517	8.7	80	664	437	307	286	352	106	745
2000	10,374	9.1	85	859	559	385	319	488	137	944
2025	23,162	10.1	131	2,203	1,244	1,090	676	1,085	573	2,334
<b>Syria</b>										
1995	6,122	9.5	135	444	249	330	243	243	93	579
2000	7,444	9.6	156	562	312	406	319	285	115	718
2025	18,733	12.0	315	1,938	972	1,281	870	1,047	336	2,253
<b>Tajikistan</b>										
1995	2,873	3.8	74	34	57	51	17	58	33	108
2000	3,340	3.7	82	42	65	60	22	63	40	125
2025	7,164	4.3	144	162	169	137	44	180	83	307
<b>Tunisia</b>										
1995	4,846	4.7	56	173	122	107	75	103	51	229
2000	5,575	4.9	61	211	145	127	90	120	62	272
2025	9,240	6.8	87	544	314	317	138	336	157	631
<b>Turkey</b>										
1995	35,160	5.2	358	1,483	1,003	838	571	870	399	1,841
2000	39,355	5.6	320	1,896	1,194	1,023	663	1,032	521	2,217
2025	63,457	7.2	356	4,195	2,277	2,274	979	2,355	1,217	4,551
<b>Turkmenistan</b>										
1995	2,068	3.6	30	45	39	36	13	40	22	75
2000	2,370	3.6	31	55	45	41	16	45	25	86
2025	4,441	4.7	51	157	114	93	27	124	56	208
<b>United Arab Emirates</b>										
1995	1,177	9.2	10	98	80	29	47	55	6.7	109
2000	1,302	10.8	12	129	103	38	44	86	11	141
2025	2,021	12.9	17	243	159	101	51	102	108	260
<b>Uzbekistan</b>										
1995	11,431	3.7	171	257	222	207	71	227	131	429
2000	13,124	3.7	179	312	255	237	87	254	151	492
2025	25,016	4.7	285	884	641	528	154	687	328	1,169
<b>Yemen</b>										
1995	6,132	3.7	92	138	96	134	100	102	28	230
2000	7,296	4.0	103	188	126	165	136	120	35	291
2025	17,118	5.2	185	705	417	473	369	418	103	890
<b>India</b>										
1995	515,361	3.8	8,135	11,262	11,152	8,245	5,079	10,020	4,298	19,397
2000	577,814	4.0	9,086	13,793	13,123	9,755	5,971	11,765	5,142	22,878
2025	957,337	6.0	14,094	43,149	31,514	25,729	11,914	31,112	14,217	57,243
<b>China</b>										
1995	800,890	2.0	9,382	6,634	7,014	9,002	3,012	8,484	4,520	16,016
2000	859,086	2.2	10,068	8,569	8,176	10,461	3,260	9,987	5,390	18,637
2025	1,116,209	3.4	13,047	24,509	15,984	21,571	3,655	20,643	13,257	37,555

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Other Asia and islands</b>										
1995	401,050	3.0	6,044	6,094	6,497	5,654	4,320	5,651	2,168	12,151
2000	453,613	3.2	6,678	7,676	7,658	6,711	5,095	6,650	2,609	14,369
2025	739,466	4.3	9,866	21,776	16,552	15,114	8,120	16,501	7,022	31,666
<b>Bangladesh</b>										
1995	59,317	2.2	856	429	755	530	583	567	136	1,285
2000	69,579	2.2	969	595	922	642	725	676	163	1,564
2025	131,442	3.1	1,652	2,381	2,253	1,779	1,448	2,086	497	4,032
<b>Bhutan</b>										
1995	799	2.1	15	1.7	9.1	7.5	6.6	8.1	1.8	17
2000	903	2.1	17	2.3	10	8.5	7.6	9.1	2.2	19
2025	1,739	2.3	29	10	22	17	16	19	4.6	39
<b>Brunei Darussalam</b>										
1995	162	3.1	1.4	3.6	2.9	2.1	2.3	2.3	0.5	5.0
2000	186	3.2	1.6	4.5	3.5	2.6	2.4	2.9	0.7	6.0
2025	301	4.1	2.0	10	6.5	5.7	3.5	6.0	2.7	12
<b>Cambodia</b>										
1995	4,786	2.0	76	20	47	48	44	42	9.1	96
2000	5,335	2.1	87	27	56	58	51	53	10	114
2025	11,240	2.5	161	122	152	131	119	132	32	283
<b>Cook Islands</b>										
1995	9	8.1	—	—	0.3	0.4	—	—	—	0.7
2000	10	8.1	—	—	0.3	0.5	—	—	—	0.8
2025	17	8.1	—	—	0.5	0.8	—	—	—	1.4
<b>Democratic People's Republic of Korea</b>										
1995	15,032	2.9	103	340	241	202	198	196	50	443
2000	16,377	3.2	111	416	284	243	231	237	59	527
2025	23,986	4.3	141	897	515	523	260	599	178	1,038
<b>East Timor</b>										
1995	405	2.1	6.4	2.0	4.9	3.5	4.0	3.7	0.7	8.4
2000	439	2.2	7.3	2.6	5.6	4.3	4.5	4.5	0.8	9.9
2025	770	2.8	11	10	12	9.4	8.7	9.9	2.7	21
<b>Fiji</b>										
1995	424	10.1	14	29	21	22	10	24	8.4	43
2000	486	10.6	15	36	25	26	11	29	11	52
2025	803	14.8	21	98	58	60	20	65	33	119
<b>Hong Kong</b>										
1995	4,322	4.2	4.5	179	102	81	67	83	34	183
2000	4,560	4.5	4.3	201	112	93	68	97	39	205
2025	4,941	5.5	3.6	268	140	132	46	141	84	271
<b>Indonesia</b>										
1995	111,372	4.1	2,464	2,082	2,332	2,214	1,138	2,169	1,239	4,546
2000	125,873	4.3	2,689	2,707	2,757	2,638	1,355	2,548	1,492	5,396
2025	192,239	6.5	3,836	8,591	6,406	6,021	2,109	6,315	4,003	12,427
<b>Kiribati</b>										
1995	34	7.0	—	—	1.1	1.3	—	—	—	2.4
2000	39	7.0	—	—	1.2	1.5	—	—	—	2.7
2025	64	7.0	—	—	2.0	2.5	—	—	—	4.5
<b>Lao People's Democratic Republic</b>										
1995	2,216	2.3	33	18	27	24	21	24	6	51
2000	2,532	2.4	36	24	32	28	25	29	7	60
2025	5,457	2.8	57	93	81	69	63	70	18	150
<b>Malaysia</b>										
1995	10,671	2.8	107	193	166	134	129	136	35	300
2000	12,055	3.0	117	245	197	165	150	171	41	362
2025	21,629	3.7	159	648	427	380	272	405	131	807
<b>Maldives</b>										
1995	107	2.5	1.4	1.3	1.6	1.1	1.2	1.2	0.3	2.7
2000	128	2.5	1.5	1.7	1.9	1.3	1.5	1.3	0.4	3.2
2025	313	3.0	2.7	6.6	5.4	3.8	4.2	4.0	1.0	9.2
<b>Marshall Islands</b>										
1995	17	7.0	—	—	0.6	0.6	—	—	—	1.2
2000	20	7.0	—	—	0.7	0.7	—	—	—	1.4
2025	33	7.0	—	—	1.2	1.1	—	—	—	2.3
<b>Micronesia</b>										
1995	48	7.0	—	—	1.7	1.7	—	—	—	3.3
2000	55	7.0	—	—	1.9	1.9	—	—	—	3.8
2025	90	7.0	—	—	3.1	3.2	—	—	—	6.3
<b>Mongolia</b>										
1995	1,232	3.0	8.8	29	21	17	16	17	4.0	37
2000	1,439	3.1	9.6	36	25	20	19	21	5.0	45
2025	2,573	3.9	13	87	53	47	34	52	14	101
<b>Myanmar</b>										
1995	24,449	2.4	341	247	318	270	241	273	74	588
2000	27,542	2.5	376	305	369	312	285	306	89	681
2025	48,860	3.2	554	995	812	737	531	809	208	1,549
<b>Nauru</b>										
1995	2.4	24.0	—	—	0.3	0.3	—	—	—	0.6
2000	2.8	24.0	—	—	0.3	0.4	—	—	—	0.7
2025	4.5	24.0	—	—	0.5	0.6	—	—	—	1.1
<b>Nepal</b>										
1995	10,289	2.2	172	53	125	100	91	107	27	225
2000	11,899	2.2	190	73	147	116	108	124	32	263
2025	24,112	2.6	320	318	359	279	259	304	76	638

# Global burden of diabetes

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Niue</b>										
1995	1.4	9.6	—	—	0.1	0.1	—	—	—	0.1
2000	1.5	9.6	—	—	0.1	0.1	—	—	—	0.1
2025	2.6	9.5	—	—	0.1	0.1	—	—	—	0.2
<b>Palau</b>										
1995	8.0	7.0	—	—	0.3	0.3	—	—	—	0.6
2000	9.2	7.0	—	—	0.3	0.4	—	—	—	0.6
2025	15	7.0	—	—	0.5	0.6	—	—	—	1.1
<b>Papua New Guinea</b>										
1995	2,146	7.2	106	48	79	75	38	88	28	154
2000	2,449	7.4	116	65	92	89	45	103	32	181
2025	4,572	9.9	193	261	236	218	99	269	86	453
<b>Philippines</b>										
1995	34,599	2.7	349	592	519	423	414	428	100	942
2000	39,554	2.9	376	761	626	511	488	528	122	1,137
2025	69,467	3.6	520	1,999	1,339	1,180	862	1,283	375	2,519
<b>Republic of Korea</b>										
1995	30,431	3.6	138	961	584	515	431	541	127	1,099
2000	32,908	3.8	148	1,108	660	596	479	618	159	1,256
2025	40,664	4.8	150	1,809	976	982	422	1,120	416	1,958
<b>Samoa</b>										
1995	69	4.8	2.3	1.0	1.5	1.8	0.9	1.3	1.1	3.3
2000	82	4.5	2.4	1.3	1.4	2.3	1.5	0.9	1.3	3.7
2025	199	9.4	7.9	11	9.9	8.8	4.7	12	1.8	19
<b>Singapore</b>										
1995	2,006	4.2	0.0	85	46	39	34	40	11	85
2000	2,122	4.6	0.0	98	51	46	34	50	13	98
2025	2,586	5.3	0.0	136	71	66	27	70	40	136
<b>Solomon Islands</b>										
1995	167	6.9	7.9	3.6	5.9	5.6	2.9	6.4	2.2	12
2000	207	7.3	9.7	5.4	7.8	7.2	3.8	8.2	3.1	15
2025	475	9.4	19	26	23	22	10	25	9.4	45
<b>Sri Lanka</b>										
1995	10,914	2.5	171	104	147	128	103	131	40	275
2000	12,131	2.6	190	128	167	151	115	156	47	318
2025	17,760	3.5	243	374	313	304	169	325	122	617
<b>Thailand</b>										
1995	36,088	2.4	514	349	472	391	368	389	106	863
2000	39,981	2.5	563	454	550	467	422	465	130	1,017
2025	52,660	3.7	674	1,248	964	959	494	1,084	345	1,923
<b>Tonga</b>										
1995	43	8.0	—	—	1.4	2.0	—	—	—	3.4
2000	49	8.0	—	—	1.7	2.3	—	—	—	3.9
2025	81	8.0	—	—	2.7	3.8	—	—	—	6.5
<b>Tuvalu</b>										
1995	6.0	4.0	—	—	0.0	0.2	—	—	—	0.2
2000	6.7	4.1	—	—	0.1	0.2	—	—	—	0.3
2025	9.5	4.8	—	—	0.1	0.4	—	—	—	0.5
<b>Vanuatu</b>										
1995	76	7.0	3.7	1.7	2.8	2.6	1.4	3.0	0.9	5.3
2000	92	7.6	4.5	2.5	3.7	3.3	1.7	3.9	1.3	7.0
2025	195	9.7	8.1	11	9.0	10	4.4	10	4.3	19
<b>Vietnam</b>										
1995	38,803	2.2	549	321	459	411	377	368	125	870
2000	44,561	2.3	636	379	543	471	460	408	147	1,015
2025	80,166	3.1	1,088	1,366	1,297	1,157	834	1,285	336	2,454
<b>Latin America and the Caribbean</b>										
1995	270,259	5.7	2,043	13,435	6,434	9,068	3,425	7,404	4,649	15,501
2000	305,400	6.0	2,167	16,085	7,572	10,706	3,941	8,814	5,497	18,279
2025	486,097	8.1	3,005	36,279	16,054	23,275	5,838	19,618	13,828	39,329
<b>Antigua and Barbuda</b>										
1995	68	4.5	—	—	1.5	1.6	—	—	—	3.0
2000	74	4.7	—	—	1.7	1.8	—	—	—	3.5
2025	87	6.7	—	—	2.8	3.0	—	—	—	5.8
<b>Argentina</b>										
1995	21,321	7.4	88	1,490	742	836	262	743	573	1,578
2000	23,334	7.3	87	1,627	805	909	280	804	630	1,714
2025	32,427	8.1	86	2,555	1,260	1,380	395	1,221	1,024	2,641
<b>Bahamas</b>										
1995	169	4.1	1.2	5.8	3.4	3.5	1.1	4.1	1.6	6.9
2000	189	4.5	1.3	7.2	4.5	4.1	1.4	5.2	2.0	8.6
2025	272	7.3	1.9	18	10	9.6	1.7	12	6.2	20
<b>Barbados</b>										
1995	183	4.5	2.6	5.6	4.2	4.0	1.1	3.8	3.3	8.2
2000	187	4.6	2.6	6.1	4.3	4.4	1.2	4.4	3.0	8.7
2025	233	7.4	3.0	14	9.3	7.9	1.2	9.7	6.4	17
<b>Belize</b>										
1995	101	4.1	1.3	2.8	2.1	2.1	1.0	1.7	1.4	4.2
2000	120	4.1	1.5	3.5	2.6	2.4	1.3	2.0	1.6	5.0
2025	255	5.6	2.6	12	7.2	7.2	3.1	7.7	3.5	14
<b>Bolivia</b>										
1995	3,623	4.4	54	105	76	83	40	81	38	159
2000	4,167	4.5	57	130	89	98	47	94	46	187
2025	8,058	5.6	80	368	219	230	99	228	121	449

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Brazil</b>										
1995	93,349	5.2	523	4,376	1,962	2,937	1,407	2,285	1,207	4,899
2000	105,098	5.5	532	5,256	2,325	3,463	1,594	2,754	1,440	5,788
2025	161,442	7.2	638	10,965	4,669	6,934	2,172	5,705	3,726	11,603
<b>Chile</b>										
1995	8,834	6.1	42	496	251	287	121	257	161	539
2000	9,655	6.5	44	580	292	332	137	302	185	624
2025	13,944	8.3	53	1,101	553	601	164	564	427	1,154
<b>Colombia</b>										
1995	19,919	4.9	150	827	463	514	270	455	252	977
2000	22,492	5.2	164	1,006	554	617	312	568	291	1,171
2025	34,421	7.5	235	2,345	1,236	1,345	416	1,350	815	2,581
<b>Costa Rica</b>										
1995	1,895	4.6	25	63	42	46	22	42	24	88
2000	2,171	4.9	28	80	52	56	26	52	29	107
2025	3,733	6.9	40	217	127	129	42	125	90	257
<b>Cuba</b>										
1995	7,752	5.4	50	366	226	190	49	237	129	416
2000	8,070	5.8	51	419	253	216	55	273	142	470
2025	9,562	8.3	54	743	430	367	50	480	267	797
<b>Dominica</b>										
1995	71	4.5	—	—	1.5	1.6	—	—	—	3.2
2000	78	4.7	—	—	1.8	1.9	—	—	—	3.7
2025	82	6.7	—	—	2.6	2.9	—	—	—	5.5
<b>Dominican Republic</b>										
1995	4,276	3.9	37	128	90	75	28	97	40	165
2000	4,850	4.2	40	162	110	92	35	119	49	202
2025	7,695	6.4	59	432	267	224	51	298	142	491
<b>Ecuador</b>										
1995	6,040	4.6	71	206	136	141	74	130	73	277
2000	7,034	4.8	76	262	166	172	87	161	89	338
2025	12,154	6.5	130	660	377	413	151	392	248	791
<b>El Salvador</b>										
1995	2,718	4.4	39	82	55	65	27	60	34	120
2000	3,224	4.4	42	99	65	77	32	68	42	142
2025	6,153	5.6	63	284	158	189	73	181	93	347
<b>Grenada</b>										
1995	92	4.5	—	—	2.0	2.1	—	—	—	4.1
2000	101	4.7	—	—	2.3	2.4	—	—	—	4.7
2025	113	6.7	—	—	3.6	3.9	—	—	—	7.6
<b>Guadeloupe</b>										
1995	280	4.8	2.3	11	6.9	6.5	1.8	7.4	4.2	13
2000	308	5.0	2.4	13	7.8	7.7	2.1	8.9	4.5	16
2025	417	7.2	2.9	27	15	15	2.3	19	9.3	30
<b>Guatemala</b>										
1995	4,744	4.1	72	123	96	99	49	94	52	195
2000	5,634	4.2	81	154	116	120	59	111	66	235
2025	12,422	5.2	119	521	307	333	150	319	171	640
<b>Guyana</b>										
1995	488	3.0	6.3	8.3	7.5	7.1	2.7	8.5	3.4	15
2000	535	3.3	7.1	11	9.1	8.6	3.4	10	4.2	18
2025	804	6.0	12	37	24	24	4.7	31	12	48
<b>Haiti</b>										
1995	3,554	3.2	64	48	56	56	18	68	27	112
2000	3,957	3.2	68	59	64	64	21	77	30	128
2025	7,138	4.0	98	187	143	142	42	178	65	285
<b>Honduras</b>										
1995	2,555	3.3	30	54	45	39	15	49	20	84
2000	3,063	3.4	33	71	55	49	18	60	26	104
2025	6,630	4.6	60	246	163	143	46	184	76	306
<b>Jamaica</b>										
1995	1,451	3.6	18	35	28	24	8.4	28	16	53
2000	1,585	3.8	18	42	32	28	11	32	17	60
2025	2,360	6.6	27	128	83	72	15	101	40	155
<b>Martinique</b>										
1995	258	5.3	2.3	11	7.0	6.8	1.6	7.6	4.7	14
2000	275	5.6	2.4	13	7.8	7.5	1.8	8.4	5.1	15
2025	347	7.7	2.5	24	14	13	1.9	16	9.3	27
<b>Mexico</b>										
1995	50,178	7.7	529	3,318	1,185	2,661	572	1,803	1,472	3,847
2000	57,649	8.1	578	4,076	1,436	3,218	690	2,176	1,787	4,654
2025	94,977	12.3	891	10,793	3,513	8,172	1,092	5,679	4,913	11,684
<b>Netherlands Antilles</b>										
1995	133	5.2	1.2	5.7	3.4	3.5	0.8	4.3	1.8	6.9
2000	138	5.5	1.2	6.4	3.8	3.8	1.0	4.5	2.1	7.6
2025	180	7.6	1.3	12	7.2	6.5	1.1	7.8	4.8	14
<b>Nicaragua</b>										
1995	1,892	4.5	17	67	39	46	23	40	22	84
2000	2,324	4.5	18	87	49	57	28	51	27	106
2025	5,415	5.5	33	264	137	160	73	148	76	297
<b>Panama</b>										
1995	1,494	4.8	19	53	36	36	18	34	20	72
2000	1,688	5.0	21	64	42	43	20	41	24	85
2025	2,657	7.3	27	167	96	98	30	97	67	194

# Global burden of diabetes

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Paraguay</b>										
1995	2,480	4.3	31	76	52	54	31	48	27	106
2000	2,868	4.6	34	97	65	66	35	64	32	131
2025	5,675	6.1	55	292	174	173	70	168	109	347
<b>Peru</b>										
1995	12,839	5.0	109	528	314	323	164	319	154	637
2000	14,814	5.1	118	643	376	385	192	378	191	761
2025	24,915	7.0	170	1,571	867	874	312	902	528	1,741
<b>Puerto Rico</b>										
1995	2,411	5.9	17	124	73	69	15	80	46	141
2000	2,591	6.0	17	139	80	77	16	90	50	156
2025	3,303	7.4	17	226	125	118	20	136	87	243
<b>Saint Kitts and Nevis</b>										
1995	41	4.5	—	—	0.9	0.9	—	—	—	1.8
2000	45	4.7	—	—	1.0	1.1	—	—	—	2.1
2025	47	6.7	—	—	1.5	1.6	—	—	—	3.2
<b>Saint Lucia</b>										
1995	142	4.5	—	—	3.1	3.3	—	—	—	6.3
2000	155	4.7	—	—	3.5	3.8	—	—	—	7.3
2025	199	6.7	—	—	6.4	6.9	—	—	—	13
<b>Saint Vincent and the Grenadines</b>										
1995	112	4.5	—	—	2.4	2.6	—	—	—	5.0
2000	123	4.7	—	—	2.8	3.0	—	—	—	5.8
2025	147	6.7	—	—	4.7	5.1	—	—	—	9.9
<b>Suriname</b>										
1995	237	3.8	2.6	6.3	4.5	4.4	1.3	5.2	2.5	8.9
2000	252	3.8	2.5	7.1	4.9	4.7	1.7	5.2	2.8	9.6
2025	416	6.1	4.0	21	13	12	2.9	16	5.8	25
<b>Trinidad and Tobago</b>										
1995	761	4.5	5.8	28	18	16	5.1	20	9.3	34
2000	833	4.7	6.2	33	20	19	6.1	23	10	39
2025	1,269	6.7	8.3	77	44	41	9.2	51	25	86
<b>Uruguay</b>										
1995	2,132	8.1	8.2	164	80	92	25	78	69	172
2000	2,236	8.0	7.5	171	83	95	26	79	73	179
2025	2,645	8.6	5.9	220	107	119	31	108	88	226
<b>Venezuela</b>										
1995	11,666	5.5	25	621	318	328	173	315	159	646
2000	13,483	5.8	23	761	386	398	198	391	194	784
2025	23,503	7.6	27	1,749	876	899	317	887	572	1,775
<b>Sub-Saharan Africa</b>										
1995	263,048	1.1	1,722	1,220	1,823	1,125	1,333	1,136	473	2,947
2000	304,644	1.1	1,899	1,550	2,152	1,303	1,565	1,331	553	3,455
2025	665,976	1.3	3,166	5,209	5,365	3,018	3,679	3,385	1,311	8,383
<b>Angola</b>										
1995	4,733	1.1	34	17	32	20	23	20	8.2	51
2000	5,561	1.1	39	22	38	23	28	23	9.6	61
2025	12,861	1.2	68	83	98	53	70	60	22	151
<b>Benin</b>										
1995	2,303	1.1	13	13	16	10	12	11	4.2	26
2000	2,654	1.2	14	17	19	12	14	12	4.9	31
2025	5,980	1.3	22	53	48	27	34	30	11	75
<b>Botswana</b>										
1995	679	1.1	4.0	3.2	4.5	2.7	3.7	2.6	0.9	7.2
2000	817	1.1	4.5	4.7	5.9	3.3	4.7	3.4	1.2	9.2
2025	1,789	1.4	8.4	18	17	8.7	10	12	4.2	26
<b>Burkina Faso</b>										
1995	4,672	1.1	37	13	30	20	22	19	8.2	50
2000	5,238	1.1	40	17	34	22	25	22	9.6	57
2025	10,755	1.2	58	68	81	46	59	48	19	126
<b>Burundi</b>										
1995	2,801	1.0	24	2.3	15	11	14	8.3	4.8	27
2000	3,211	1.0	28	3.2	18	13	16	10	5.2	31
2025	7,082	1.1	58	17	46	29	35	28	13	75
<b>Cameroon</b>										
1995	5,987	1.2	36	36	45	27	30	29	13	72
2000	7,005	1.2	38	46	54	31	36	34	15	85
2025	15,421	1.4	60	150	137	73	87	89	34	210
<b>Cape Verde</b>										
1995	182	1.1	0.8	1.1	1.0	0.9	0.9	0.6	0.5	1.9
2000	218	1.2	0.9	1.7	1.4	1.1	1.3	0.6	0.6	2.5
2025	454	1.5	1.4	5.4	4.3	2.5	2.6	3.3	0.9	6.8
<b>Central African Republic</b>										
1995	1,559	1.3	8.7	11	12	7.9	7.8	7.9	3.8	19
2000	1,762	1.2	9.0	13	13	8.8	8.9	9.0	4.2	22
2025	3,436	1.4	12	35	29	18	19	20	8.0	47
<b>Chad</b>										
1995	2,954	1.2	17	19	23	13	15	15	5.8	36
2000	3,421	1.2	19	23	27	15	18	17	6.7	42
2025	6,814	1.3	26	66	60	32	38	40	14	92
<b>Comoros</b>										
1995	268	1.1	1.8	1.1	1.8	1.1	1.3	1.1	0.4	2.9
2000	318	1.1	2.0	1.4	2.1	1.3	1.6	1.3	0.5	3.4
2025	818	1.2	3.7	6.1	6.5	3.3	4.6	4.0	1.3	9.8

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Congo</b>										
1995	1,138	1.1	7.0	6.0	8.0	5.0	5.8	5.0	2.3	13
2000	1,298	1.1	7.4	7.4	9.3	5.6	6.7	5.6	2.5	15
2025	2,837	1.2	11	24	23	12	16	14	4.9	35
<b>Côte d'Ivoire</b>										
1995	5,798	1.2	35	32	45	22	30	27	9.6	67
2000	6,708	1.1	38	38	51	26	35	30	11	77
2025	16,654	1.2	62	133	133	62	100	71	24	195
<b>Djibouti</b>										
1995	274	1.4	0.5	3.4	2.6	1.4	1.6	1.8	0.5	3.9
2000	317	1.4	0.5	4.1	3.0	1.5	1.8	2.1	0.6	4.6
2025	593	1.6	0.6	8.8	6.1	3.3	3.6	4.4	1.4	9.4
<b>Equatorial Guinea</b>										
1995	191	1.2	1.4	0.8	1.3	0.9	0.9	0.8	0.5	2.2
2000	210	1.2	1.5	1.0	1.5	1.0	1.0	0.9	0.5	2.4
2025	420	1.2	2.2	3.0	3.3	1.9	2.3	2.1	0.9	5.2
<b>Eritrea</b>										
1995	1,617	1.0	13	2.9	9.8	6.6	7.5	6.3	2.6	16
2000	1,859	1.0	15	3.8	11	7.7	8.7	7.2	3.2	19
2025	3,892	1.2	28	17	27	18	19	17	8.2	45
<b>Ethiopia</b>										
1995	23,904	1.0	200	44	147	97	113	90	41	244
2000	27,657	1.0	227	56	172	111	132	104	47	283
2025	62,378	1.1	429	255	427	257	315	256	114	685
<b>Gabon</b>										
1995	692	1.4	4.7	4.8	5.8	3.8	3.4	4.1	2.1	9.6
2000	760	1.4	5.0	5.6	6.4	4.2	3.7	4.5	2.4	11
2025	1,412	1.4	6.2	13	12	7.2	7.8	7.2	4.1	19
<b>Gambia</b>										
1995	550	1.1	3.7	2.3	3.7	2.3	2.8	2.5	0.8	6.1
2000	633	1.1	4.1	3.1	4.4	2.8	3.2	2.9	1.0	7.2
2025	1,175	1.3	5.7	9.9	9.5	6.1	6.0	6.9	2.7	16
<b>Ghana</b>										
1995	7,781	1.1	47	42	56	33	40	35	14	89
2000	9,079	1.2	53	53	67	39	48	42	17	106
2025	20,232	1.3	87	182	171	98	113	111	45	269
<b>Guinea</b>										
1995	2,854	1.1	19	12	19	12	15	12	4.5	31
2000	3,310	1.1	21	15	23	13	17	14	5.3	36
2025	7,373	1.2	33	56	59	31	41	36	12	89
<b>Guinea-Bissau</b>										
1995	520	1.2	3.9	2.3	3.7	2.4	2.4	2.6	1.1	6.1
2000	578	1.2	4.1	2.9	4.2	2.8	2.8	2.8	1.3	6.9
2025	1,050	1.3	5.1	8.4	8.4	5.1	5.7	5.5	2.3	14
<b>Kenya</b>										
1995	11,503	1.1	74	49	78	45	60	41	21	123
2000	13,668	1.1	81	65	94	52	73	48	24	146
2025	33,240	1.3	136	307	307	136	211	177	54	442
<b>Lesotho</b>										
1995	970	1.1	7.6	3.3	6.4	4.6	4.5	4.3	2.1	11
2000	1,127	1.1	8.4	4.5	7.6	5.3	5.3	5.1	2.5	13
2025	2,335	1.3	13	18	19	12	12	13	6.2	31
<b>Liberia</b>										
1995	1,333	1.2	7.4	9.2	11	5.9	7.0	6.5	3.1	17
2000	1,556	1.3	8.1	11	12	7.0	8.3	7.5	3.7	19
2025	3,613	1.3	13	35	31	17	21	19	8.3	48
<b>Madagascar</b>										
1995	6,424	1.1	45	24	42	27	32	26	11	69
2000	7,593	1.1	51	32	51	32	38	31	13	83
2025	17,940	1.2	90	131	139	81	98	89	35	221
<b>Malawi</b>										
1995	4,762	1.0	39	8.9	29	19	23	18	7.7	48
2000	5,237	1.0	42	11	32	21	25	19	8.5	53
2025	11,190	1.0	88	26	69	45	55	41	19	114
<b>Mali</b>										
1995	4,563	1.0	31	16	29	19	23	18	7.2	48
2000	5,317	1.1	35	22	35	22	27	21	8.5	56
2025	12,110	1.2	59	85	92	52	65	58	20	144
<b>Mauritania</b>										
1995	1,049	1.2	4.9	7.9	8.1	4.7	5.8	5.0	1.9	13
2000	1,221	1.3	4.9	11	10	5.5	7.1	6.1	2.4	16
2025	2,468	1.4	7.4	28	23	12	14	15	5.4	35
<b>Mauritius</b>										
1995	695	1.3	4.0	5.3	5.6	3.7	3.9	3.5	1.9	9.3
2000	763	1.4	4.4	6.2	6.3	4.2	4.1	4.3	2.1	11
2025	1,059	1.8	5.2	13	10	8.5	4.7	8.7	5.3	19
<b>Mozambique</b>										
1995	7,220	1.1	53	26	48	31	35	31	14	79
2000	8,545	1.2	51	48	62	38	44	39	17	99
2025	17,900	1.3	73	155	147	81	102	92	34	228
<b>Namibia</b>										
1995	734	1.2	4.9	3.8	5.4	3.3	3.7	3.4	1.5	8.7
2000	850	1.2	5.3	4.9	6.4	3.8	4.4	4.0	1.8	10
2025	1,735	1.4	8.3	16	15	8.7	9.5	10	4.3	24

# Global burden of diabetes

## Appendix 2 (continued)

Country and year	Population (000)	Prevalence (%)	Number of people (000)							Total
			Rural	Urban	Male	Female	Age (years)			
							20-44	45-64	≥65	
<b>Niger</b>										
1995	3,780	1.0	31	6.6	22	15	18	13	5.7	37
2000	4,432	1.0	35	8.6	26	18	21	16	6.8	44
2025	10,616	1.1	70	42	69	43	54	41	17	112
<b>Nigeria</b>										
1995	49,369	1.2	275	301	360	216	258	233	85	576
2000	57,297	1.2	299	387	431	254	304	279	102	685
2025	124,633	1.3	437	1,221	1,061	597	699	696	263	1,658
<b>Reunion</b>										
1995	402	1.5	1.5	4.3	3.4	2.4	2.2	2.4	1.3	5.8
2000	443	1.5	1.5	5.3	4.0	2.8	2.5	2.8	1.5	6.8
2025	641	2.0	1.7	11	6.8	5.7	3.1	5.8	3.6	13
<b>Rwanda</b>										
1995	3,392	0.9	29	2.9	19	13	16	11	5.1	32
2000	3,971	0.9	33	3.7	22	15	19	12	5.8	37
2025	8,496	1.0	68	19	53	34	42	32	12	86
<b>Sao Tome and Principe</b>										
1995	50	1.3	—	—	0.4	0.3	—	—	—	0.7
2000	55	1.3	—	—	0.4	0.3	—	—	—	0.7
2025	76	1.3	—	—	0.6	0.4	—	—	—	1.0
<b>Senegal</b>										
1995	3,712	1.2	22	21	27	16	19	17	6.6	43
2000	4,329	1.2	24	27	32	18	23	20	7.7	51
2025	9,075	1.3	36	84	78	43	51	52	18	121
<b>Seychelles</b>										
1995	44	10.0	—	—	1.7	2.6	—	—	—	4.4
2000	48	10.0	—	—	1.9	2.9	—	—	—	4.8
2025	67	10.0	—	—	2.6	4.0	—	—	—	6.7
<b>Sierra Leone</b>										
1995	2,062	1.2	12	13	15	9.3	11	10	3.7	24
2000	2,315	1.2	12	16	17	10	12	11	4.2	28
2025	4,460	1.3	15	43	38	21	25	25	8.5	59
<b>Somalia</b>										
1995	3,901	1.1	28	14	26	16	20	16	6.4	42
2000	4,552	1.1	31	18	31	18	23	19	7.3	49
2025	10,492	1.2	55	68	80	43	58	49	17	123
<b>South Africa</b>										
1995	21,751	1.4	93	205	186	112	122	122	54	298
2000	24,799	1.4	102	245	216	130	138	146	62	346
2025	44,663	1.6	133	588	438	282	247	325	149	721
<b>Sudan</b>										
1995	12,725	1.1	90	48	85	53	63	54	22	138
2000	14,879	1.1	104	58	100	62	72	65	25	162
2025	30,995	1.3	165	227	246	146	163	162	66	392
<b>Swaziland</b>										
1995	388	1.1	2.3	1.9	2.6	1.6	2.0	1.6	0.6	4.2
2000	466	1.1	2.5	2.6	3.2	1.9	2.4	2.0	0.7	5.1
2025	986	1.4	4.3	9.8	9.2	4.9	5.6	6.4	2.1	14
<b>Togo</b>										
1995	1,820	1.1	13	7.1	12	8.0	8.7	7.7	3.5	20
2000	2,126	1.1	14	9.1	14	9.2	10	9.0	4.1	23
2025	4,841	1.2	25	34	37	22	26	23	10	59
<b>Uganda</b>										
1995	8,655	1.0	70	13	50	33	42	28	13	83
2000	9,927	0.9	77	18	58	36	49	31	15	94
2025	23,242	1.0	151	84	151	85	124	83	29	236
<b>United Republic of Tanzania</b>										
1995	12,932	1.0	90	43	83	51	63	51	20	134
2000	15,009	1.1	100	58	98	60	76	58	24	158
2025	33,073	1.2	170	232	260	142	184	160	58	402
<b>Zaire</b>										
1995	18,308	1.1	132	68	122	78	90	77	33	200
2000	21,240	1.1	148	83	142	89	106	87	38	231
2025	50,658	1.2	262	329	386	205	285	223	84	591
<b>Zambia</b>										
1995	3,951	1.1	21	22	28	15	21	16	5.8	42
2000	4,542	1.1	25	24	32	17	25	17	6.5	48
2025	10,166	1.2	44	83	87	40	63	50	14	127
<b>Zimbabwe</b>										
1995	5,097	1.1	29	27	37	20	28	20	8.2	56
2000	5,723	1.1	30	34	42	22	33	23	9.2	64
2025	11,781	1.3	48	109	104	53	71	65	21	157

Separate urban and rural estimates were not calculated for demographically developed and some small island countries. Some small island countries also lack age-specific estimates. Developed countries comprise EME and FSE. Developing countries are all others.

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