

VITAL STATISTICS

Mortality due to diabetes mellitus in children under 15 years of age, Mexico, 2000-2009

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Today diabetes mellitus is the primary cause of death at the national level, causing ~78,000 deaths during 2009 (last official figure provided by the Mexican National Institute of Statistics and Geography, INEGI). It is the condition that shows a tendency toward the highest growth rate affecting, as all chronic degenerative diseases, particularly the adult population.

However, the age at which the disease appears has shown an increasingly downward trend towards younger persons, caused by lifestyles marked by inactivity along with the increasing conditions of overweight and obesity at an alarming rate among the Mexican population.

In this regard, the segment of the population composed of children and adolescents affected by diabetes experience the damage caused by diabetes mellitus, even if figures reported by mortality statistics do not reflect the overall performance. These figures are on the rise. As can be seen in children <15 years of age, the number of deaths has remained relatively stable over the last 10 years, with an average of 50 deaths (Table 1).

Indeed, despite the relatively low number of deaths (no less serious because of these numbers), in each age

Table 1. Deaths due to diabetes mellitus

Year registered	Age groups				
	< 1 year	1-4 years	5-9 years	10-14 years	< 15 years
2000	5	10	13	31	59
2001	4	12	10	31	57
2002	5	13	16	27	61
2003	4	9	12	29	54
2004	1	8	15	22	46
2005	2	10	13	33	58
2006	4	7	14	24	49
2007	4	9	5	19	37
2008	4	8	4	20	36
2009	3	8	12	27	50
General total	36	94	114	263	507

Source: Sistema Dinámico de Información en Sistemas de Salud (Cubes)
<http://dgis.salud.gob.mx/cubos>

group figures are observed that are somewhat stable, with a slight downward trend.

Table 2 shows the trend of the rates (deaths per 100,000 inhabitants in each age group), confirming the slight downward trend (see also Figure 1).

As for age distribution, it is noted that of the deaths reported during 2000-2009 (507 total) 7% are children <1 year of age: 19% for the 1- to 4-year-old age group, 22% for the 5- to 9-year-old group and 52% for adolescents aged 10-14 years (Figure 2).

Regarding gender distribution, it is important to note that within the total population, female mortality is maintained and even exceeded, which characterizes the behavior of this

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Table 2. Mortality rate due to diabetes mellitus according to age groups, México, 2000 -2009

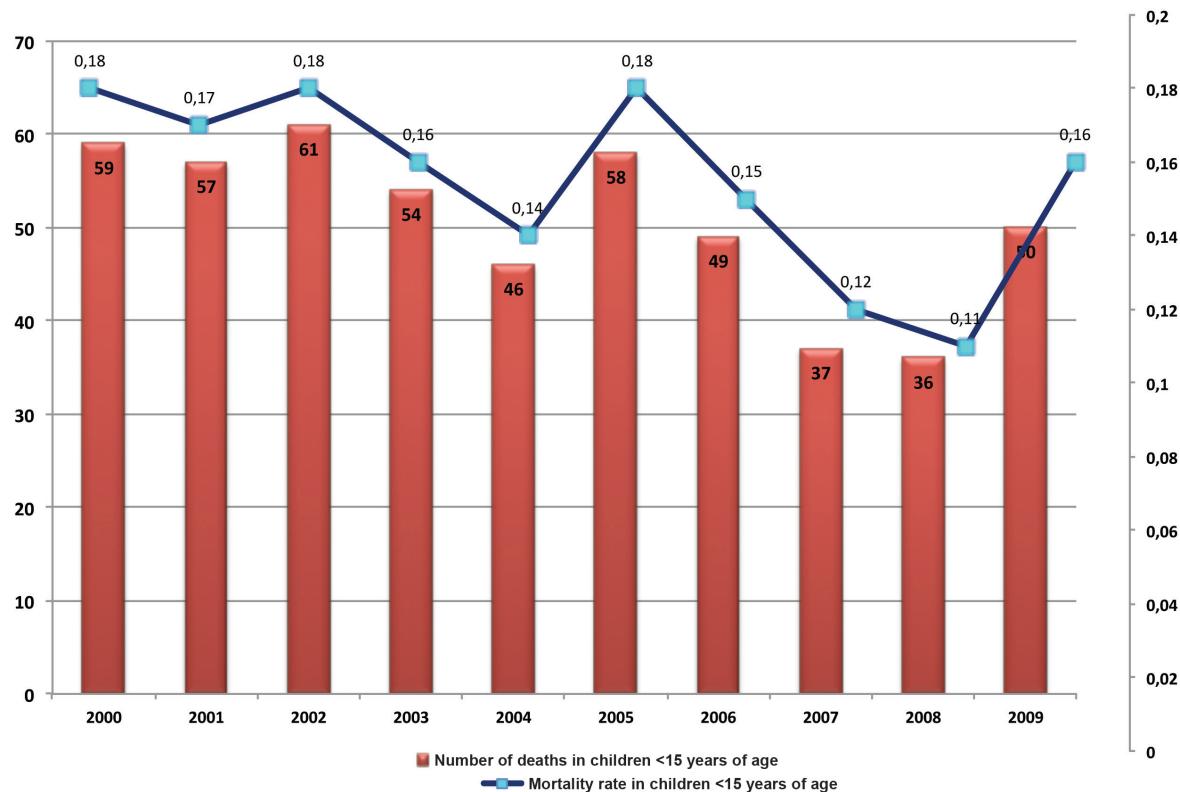
Year	Age groups				
	<1 year	1-4 years	5-9 years	10-14 years	<15 years
2000	0.21	0.11	0.12	0.28	0.18
2001	0.17	0.13	0.09	0.28	0.17
2002	0.23	0.14	0.14	0.25	0.18
2003	0.19	0.10	0.11	0.26	0.16
2004	0.05	0.09	0.14	0.20	0.14
2005	0.10	0.12	0.12	0.30	0.18
2006	0.20	0.09	0.13	0.22	0.15
2007	0.21	0.11	0.05	0.17	0.12
2008	0.21	0.10	0.04	0.18	0.11
2009	0.16	0.10	0.11	0.25	0.16
Total	0.17	0.11	0.10	0.24	0.17

Rate per 100,000 inhabitants calculated on the basis of population projections of CONAPO

disease with a ratio of 60% vs. 40% compared to males, i.e., 302 deaths occurred in females compared to 205 in males. These percentages, within the overall mortality due to this cause, correspond to 54% and 46%, respectively.

Finally, Table 3 shows the frequency with which each type of diabetes mellitus affects the population reported. Whereas the higher frequency (202 deaths) was observed in noninsulin-dependent diabetes type I [International Classification of Diseases (ICD) key: E10] with 40% of cases (as expected). This percentage is likely underreported because of the accuracy problems in completing death certificates (the physician simply uses "diabetes mellitus") and appears in a similar number (206 deaths) as unspecified diabetes mellitus (code E14) which, undoubtedly, also corresponds to a high proportion of type 1 diabetes.

The distribution described above could be modified in coming years because statistics show that morbidity due to problems of obesity and overweight among children and adolescents and the frequency of noninsulin-dependent diabetes or type II (ICD key: E11) is increasing.

**Figure 1.** Number of deaths and mortality rates due to diabetes mellitus in children <15 years of age, Mexico, 2000-2009.

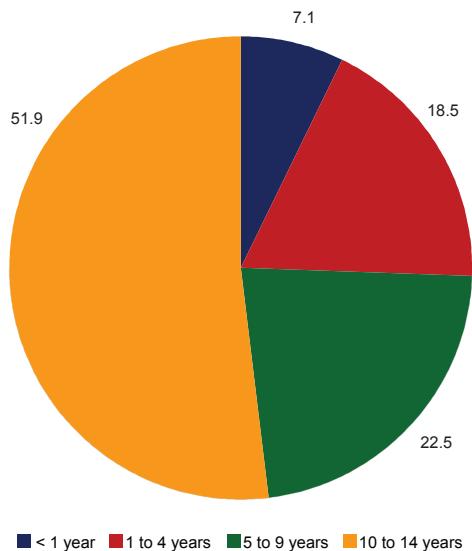


Figure 2. Percent distribution of deaths due to diabetes mellitus among children <15 years of age, Mexico, 2000-2009.

Table 3. Deaths due to diabetes in children <15 years according to type, México, 2000-2009

Deaths ICD cause 3	5-year age group				
	<1 year	1-4 years	5-9 years	10-14 years	<15 years
E10 Insulin-dependent diabetes mellitus	7	31	36	128	202
E11 Noninsulin-dependent diabetes mellitus	5	16	21	23	65
E12 Diabetes mellitus associated with undernutrition	1	10	11	9	31
E13 Other types of specified diabetes mellitus		1		2	3
E14 Nonspecified cause of diabetes mellitus	23	36	46	101	206
General total	36	94	114	263	507

Source: Sistema Dinámico de Información en Sistemas de Salud (Cubos)

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ICD, International Classification of Diseases.