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VITAL STATISTICS

Evolution of mortality due to accidental causes in children under 15 years of age: Mexico, 2000-2013

Sonia B. Fernández Cantón

Changes in the epidemiological profile of deaths of children <15 years of age have shown that the relevance of common infectious diseases has taken a "back seat" but has not disappeared. At present, it is necessary to focus our attention on noncommunicable diseases as well as on external causes. This is especially so in cases of accidental deaths as these are often the leading causes of death in children and adolescents. Motor vehicle accidents, accidents that occur at home (related to falls, burns, and poisonings) and "other accidents" make up the data used for analysis in the present contribution. Using the year 2000 as a starting point, during the last 14 years on an annual basis there have been, on average, a little more than 4500 accidental deaths in the population <15 years of age. This is equal to almost 64,000 deaths due to these causes. Nonetheless, the successes of the preventive programs undertaken by the Department of Health regarding this issue is notable because there is constant and sustained decline observed during the entire period, which goes from a mortality rate of 16.6 deaths/100,000 in children <15 years of age in 2000 to 10.1 in 2013 (Figure 1). At the national level, the percentage decrease in the number of deaths is 47%, from 5590 to 2940 (estimated figure) between 2000 and 2013 (Table 1)[1] despite of the notable decrease in the number of accidental deaths in the population <15 years.

It is notable how little the relative weight that these deaths represent with respect to the total number of deaths has varied (including all causes). In fact, in the year 2000, accidents represented 10.6% of the total deaths in the study population. This figure increased slightly in the next 4 years, to later retake the initial value and little by

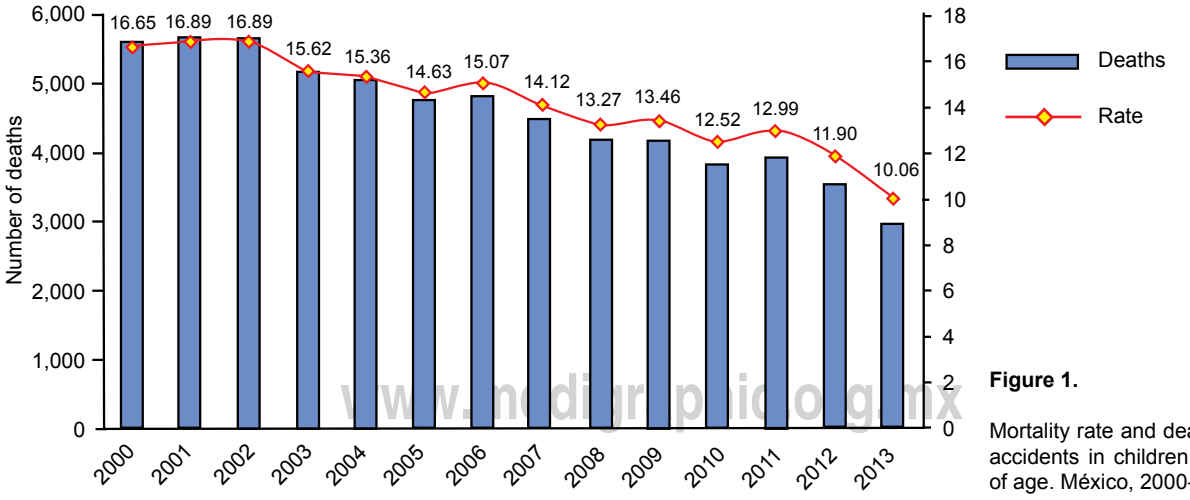

Figure 1.

Mortality rate and deaths due to accidents in children <15 years of age. México, 2000-2013.

Dirección General de Calidad y Educación, Secretaría de Salud, México D.F., México

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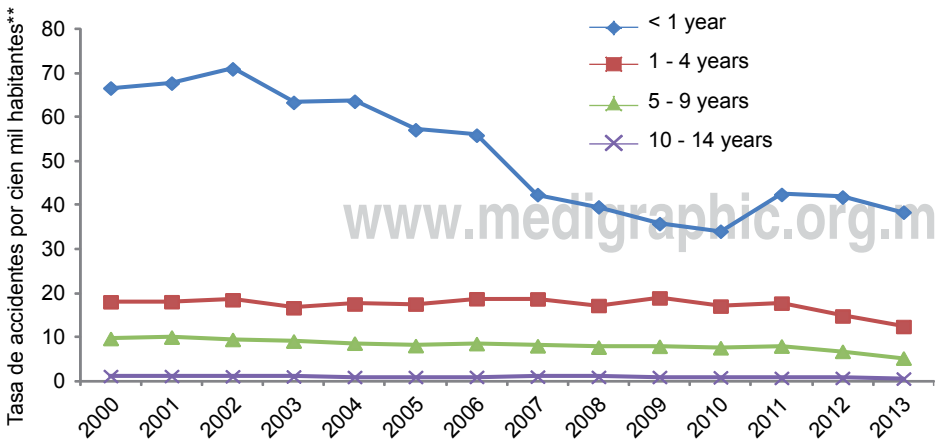
little a decline slightly more than one percentage point was noted (9.3%, according to the 2012 preliminary numbers). This denotes that the decrease in overall mortality (for that group) has been almost at the same rate of change. Analysis of the evolution of deaths and rates of mortality by accidents according to age groups implies consideration, on the one hand, of the absolute numbers that represent the number of deaths and, on the other hand, the behavior of the indicator as a relative figure linked to the volume of the population exposed to the risk. In this sense, the group of children 1 to 4 years of age particularly stands out (with a median rate of 17.4/100,000) for two reasons: first, for being the group where the highest concentration of deaths (almost 20,000 over the period analyzed), representing almost a third of the deaths of children <15 years of age and second, by making up the tendency showing the least percentage in decline (31% between 2000 and 2013) (Figure 2). Another age group

Table 1. Deaths and mortality rate due to accidents in children under 15 years. Mexico, 2000-2013

Year of registration	Five-year age group									
	Children <1 year of age		1-4 years		5-9 years		10-14 years		General total	
	Deaths	Rate**	Deaths	Rate	Deaths	Rate	Deaths	Rate	Deaths	Rate
2000	1,575	66.6	1,641	18.1	1,092	9.7	1,282	1.2	5,590	16.6
2001	1,591	67.8	1,647	18.1	1,125	10.0	1,304	1.2	5,667	16.9
2002	1,658	71.0	1,686	18.5	1,060	9.5	1,242	1.1	5,646	16.9
2003	1,473	63.4	1,503	16.7	1,016	9.1	1,194	1.1	5,186	15.6
2004	1,473	63.6	1,543	17.6	960	8.6	1,077	1.0	5,053	15.4
2005	1,316	57.2	1,485	17.5	899	8.1	1,062	1.0	4,762	14.6
2006	1,281	55.9	1,529	18.8	948	8.5	1,088	1.0	4,846	15.1
2007	968	42.4	1,483	18.7	885	8.1	1,147	1.1	4,483	14.1
2008	901	39.6	1,337	17.2	837	7.8	1,081	1.0	4,156	13.3
2009	812	35.8	1,453	19.0	834	7.9	1,062	1.0	4,161	13.5
2010	768	34.1	1,298	17.1	773	7.6	977	0.9	3,816	12.5
2011	958	42.5	1,338	17.8	787	8.0	823	0.8	3,906	13.0
2012*	950	41.9	1,110	14.8	652	6.8	818	0.8	3,530	11.9
2013*	876	38.4	924	12.4	492	5.3	648	0.6	2,940	10.1
General total	16,600	51.6	19,977	17.4	12,360	8.3	14,805	1.0	63,742	14.3

*2012 preliminary rates provided by SEED; 2013 annual estimated rate is from data collected by SEED until August 2013.
**Per 100,000 births; rate for other age groups per 100,000 inhabitants of each age



* Cifras 2000-2011 son definitivas, 2012 preliminares y 2013 estimadas con base a lo observado hasta el mes de agosto de 2013.
** Tasa por cien mil habitantes, excepto para menores de un año calculadas con base en el número de nacimientos.

Figure 2.

Evolution of mortality rates due to accidents in children <15 years of age. México, 2000-2013.

whose relevance warrants a careful analysis is that of children <1 year of age whose rates of mortality are the highest with respect to the other age groups (with an average value of 51.6 deaths for each 100,000 births, and extreme values that go from 66.6 to 38.4 deaths for each 100,000 births). The percentage decrease recorded (for the entire group) is 42.3% over 14 years of age. As for the highest rate of change, this occurred in the 10- to 14-year-old population where these rates decreased by 50%. It is worth mentioning that these rates are those of lesser magnitude (one death/100,000 inhabitants of that age) (Figure 2). With regard to classification of accidents, motor vehicle accidents stand out as the most relevant by grouping almost a third of the deaths during the period (31.3%). These are followed by accidental drowning and submersions (13.8%), accidental falls (3.7%), poisonings and accidents related with fire, smoke and flames with very similar percentages (~2.4%). The remaining 46.5% of the deaths correspond to the category "other accidents," which groups multiple causes with different desegregation (Figure 3). The long-term behavior during the period is shown in Table 2 (for greater strength of numbers, the estimate corresponding to 2013 was not included). It is important to note that the approach to this problem is not simple because the same context in which the affected population is immersed is conducive to the occurrence of these events such that accidents do happen outside the home (motor vehicle traffic accidents) or within the home. This is brought about by the increasing use of electrical household goods, increase in the number of cleaning chemicals, large number of medications kept in the home, the greater proportion of dwellings in buildings (to greater heights) and, most often, because there are fewer adults to care for children.

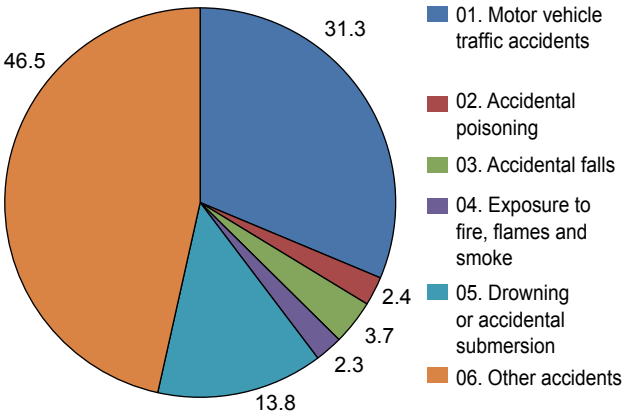


Figure 3. Distribution of deaths of children <15 years of age during the period 2000-2013 according to type of accident.

Finally, it should be noted that the number of deaths only show a small fraction of the real extent of the problem. It has been estimated that "for every child who dies from an accident, 45 children require hospitalization,

Table 2. Evolution of accidental deaths of children under 15 years according to type of accident 2000-2012

Year of death	Motor vehicle traffic accidents	Accidental poisoning	Accidental falls	Exposure to fire, flames and smoke	Drowning or accidental submersion	Other accidents	Total
2000	1,543	137	211	160	777	2,762	5,590
2001	1,575	143	219	139	763	2,828	5,667
2002	1,639	122	213	109	777	2,786	5,646
2003	1,592	113	197	85	707	2,492	5,186
2004	1,509	108	166	83	642	2,545	5,053
2005	1,462	126	183	106	645	2,240	4,762
2006	1,603	111	172	106	629	2,225	4,846
2007	1,415	117	143	116	645	2,047	4,483
2008	1,440	87	168	88	637	1,736	4,156
2009	1,511	114	153	123	607	1,653	4,161
2010	1,341	92	141	92	567	1,583	3,816
2011	1,277	113	161	76	531	1,748	3,906
2012	1,093	63	144	63	444	1,723	3,530

1300 children are seen in an emergency service and 2600 children are treated at home."

Correspondence: Sonia B. Fernández Cantón
E-mail: sonia_fernandez@prodigy.net.mx

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