VITAL STATISTICS

Homicides in children under 15 years of age, Mexico 2000-2010. Preliminary report

Gonzalo Gutiérrez-Trujillo,[1] Sonia B. Fernández-Cantón,[2] and Ricardo Viguri-Uribe[1]

Since 1997, an increase in homicides is reported daily in Mexico. Escalante de Gonzalbo discusses the phenomenon with intelligence and professionalism and relates not only to drug trafficking and organized crime but also raises the possibility that homicides are caused by other violent groups.[1]

When analyzing homicides in Mexico from 2000-2010 among different age groups, it was found that the increase occurs throughout life, although it is higher from 25 to 44 years of age, an expected situation because this is the stage where there is greater involvement in illicit activities (Table 1).[2] However, to our surprise, in those <15 years of age the rate of mortality due to homicide has also increased significantly from 2007 onwards: between the years 2010 and 2011, total deaths from this cause increased ~100% (Figure 1).

Initially it was thought that this increase was due to the participation of adolescents in the activities of organized crime. This hypothesis is easily dismissed when it was found that within this group the largest increase in homicides was observed in children <1 year of age in whom, between the years 2007 and 2010, the rates increased by ~130%, a much higher increase than that recorded during 1 to 4 years of age, 5 to 9 years of age and 10 to 14 years of age (Table 2, Figure 2). Moreover, in infants <1 month of age, the homicide rate is slightly higher than in infants 1 to 11 months of age (Figures 3 and 4).

The types of aggression that caused the deaths of children <15 years of age are varied.[2] The most frequent are the use of firearms, hanging, strangulation or suffocation, drowning and the use of sharp objects (Table 3). By analyzing the geographic distribution of homicide rates among children <1 year of age, we find that the states where homicides are most frequent are not those states where organized crime has caused more deaths (Table 4). We must assume, then, that these murders are caused by family violence. The states with the highest rates are the State of Mexico, Aguascalientes, Campeche, and Colima (Figure 5).

The coincidence of the increase in homicide rates among children <15 years with the rates of homicide related to drug trafficking and organized crime, of course, does not establish "cause and effect." However, it suggests that there may be common social circumstances favoring them. Moreover, the fact that homicides occur more frequently in different states does not rule out this hypothesis. With the data available, one cannot reach major conclusions. In order to further advance an investigation, the study of the proceedings of the public prosecutor will be necessary because death certificates contain little useful information for our purpose and, secondly, visiting households to gather information can lead to uncontrollable risks.

At any rate, we will report at a later date on the data found in our investigation. This issue has great importance because, regardless of where it is found, we are dealing with an extreme form of family violence.

1   Departamento de Ediciones Médicas, Hospital Infantil de México Federico Gómez, Mexico, D.F., Mexico
2   Dirección de Información Epidemiológica, Secretaría de Salud, México, D.F., México

Correspondence: Dra. Sonia B. Fernández Cantón
Dirección de Información Epidemiológica
Secretaría de Salud
México, D.F., México
E-mail: sfernandez@dgpi.salud.org.mx

Table 1. Deaths due to homicides according to age groups, México 2000-2010

Year	Total deaths		<15 years		15-24 years		25-44 years		45-64 years		>65 years		NS
	n	Rate[1/]	n	Rate[1/]	n	Rate[1/]	n	Rate[1/]	n	Rate[1/]	n	Rate[1/]	
2000	10,735	11.0	477	1.4	2,526	13.3	4,963	18.5	1,946	16.0	672	14.1	151
2001	10,282	10.3	497	1.5	2,509	12.8	4,687	16.2	1,784	13.8	662	14.0	143
2002	10,084	10.0	430	1.3	2.366	12.0	4,601	15.6	1,873	14.0	641	13.1	173
2003	10,082	9.9	402	1.2	2,150	10.9	4,737	15.8	1,923	13.8	689	13.6	181
2004	9,325	9.1	376	1.1	2,039	10.3	4,482	14.7	1,707	11.8	614	11.7	116
2005	9,920	9.5	434	1.3	2,126	10.7	4,632	14.9	1,912	12.7	632	11.7	184
2006	10,450	10.0	404	1.3	2,161	10.8	5,043	16.0	1982	12.6	661	11.8	199
2007	8,865	8.4	298	0.9	1,785	8.9	4,385	13.8	1,752	10.8	493	8.5	152
2008	14,004	13.1	345	1.1	3,003	14.9	7,346	22.8	2,444	14.4	648	10.8	218
2009	19,828	18.4	498	1.6	4,343	21.5	10,381	31.8	3,260	18.5	793	12.8	553
2010*	29,598	27.3	571	1.9	5,900	29.1	15,998	48.5	5,200	28.5	1,200	18.7	729

[1/]per 100,000 subjects according to age group.
Source: Reference 2. Proyecciones de la Población de México CONTEO 2005 1990-2012, CONAPO.
Preliminary rates provided by the Sistema Estadístico y Epidemiológico de las Defunciones (SSED).
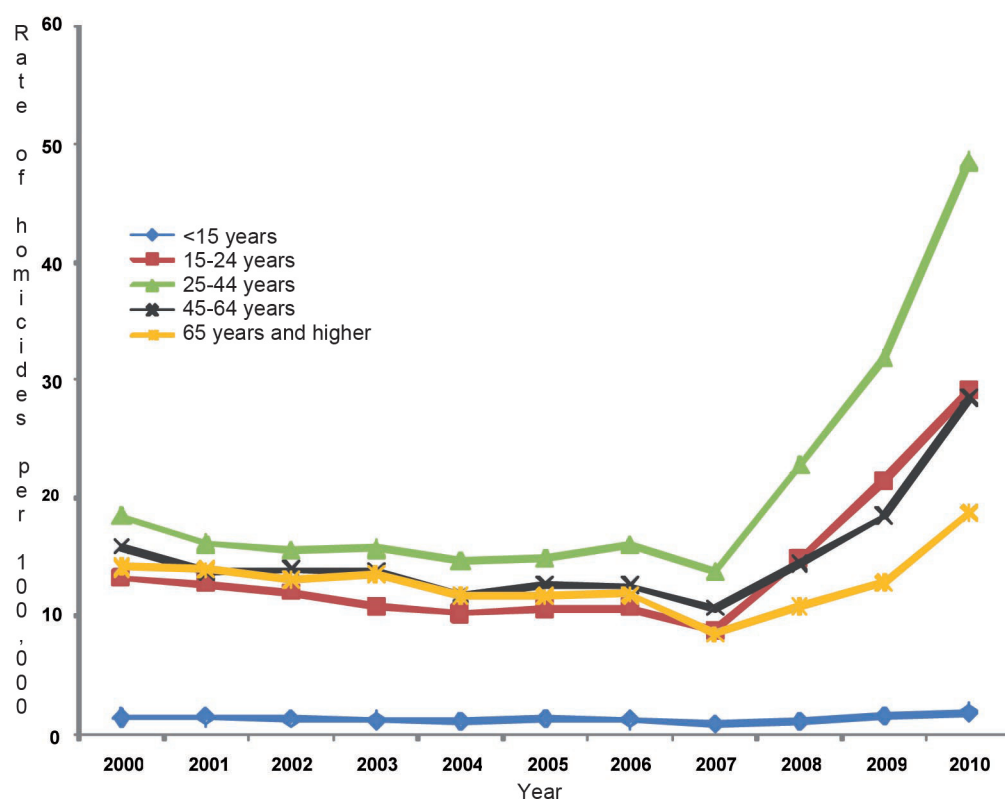NS, not specified.

Figure 1. Evolution of mortality due to homicides according to age groups, México 2000-2010.
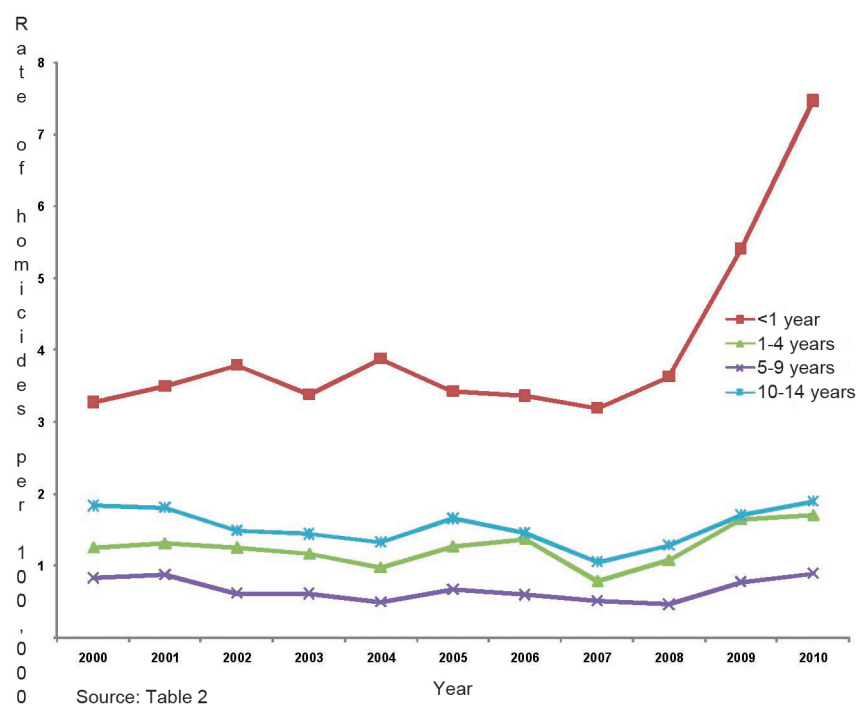
Table 2. Deaths due to homicides in children younger than 15 years of age according to age groups, México 2000-2010

Year	Total deaths		<1 year		1-4 years		5-9 years		10-14 years	
	n	Rate[2/]	n	Rate[1/]	n	Rate[2/]	n	Rate[2/]	n	Rate[2/]
2000	477	1.4	79	3.3	108	1.3	93	0.8	197	1.8
2001	497	1.5	80	3.5	120	1.3	99	0.9	198	1.8
2002	430	1.3	83	3.8	114	1.3	69	0.6	164	1.5
2003	402	1.2	71	3.4	105	1.2	68	0.6	158	1.4
2004	367	1.1	79	3.9	86	1.0	56	0.5	146	1.3
2005	434	1.3	69	3.4	108	1.3	75	0.7	182	1.7
2006	404	1.3	67	3.4	112	1.4	66	0.6	159	1.5
2007	298	0.9	63	3.2	63	0.8	57	0.5	115	1.1
2008	345	1.1	71	3.6	84	1.1	50	0.5	140	1.3
2009	498	1.6	105	5.4	127	1.7	82	0.8	184	1.7
2010*	571	1.9	144	7.5	130	1.7	91	0.9	206	1.9
Total	4,723	100.0	911	19.3	1,157	24.5	806	17.1	1,849	39.1

[1/]per 100,000 births. [2/]per 100,000 subjects according to age group.
*Preliminary rates provided by Sistema Estadístico y Epidemiológico de las Defunciones (SSED).
Source: Dirección General de Información en Salud (DGIS). Proyecciones de la Población de México CONTEO 2005 1990-2012, CONAPO.

Figure 2. Evolution of mortality due to homicides in children under 15 years of age, México 2000-2010.
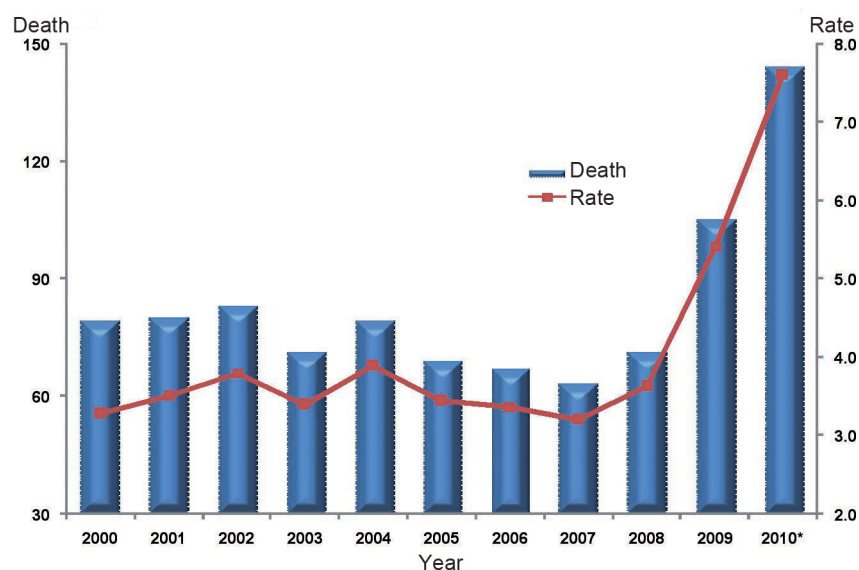
Figure 3. Evolution of deaths and homicide rate in children under 1 year of age, México 2000-2010.
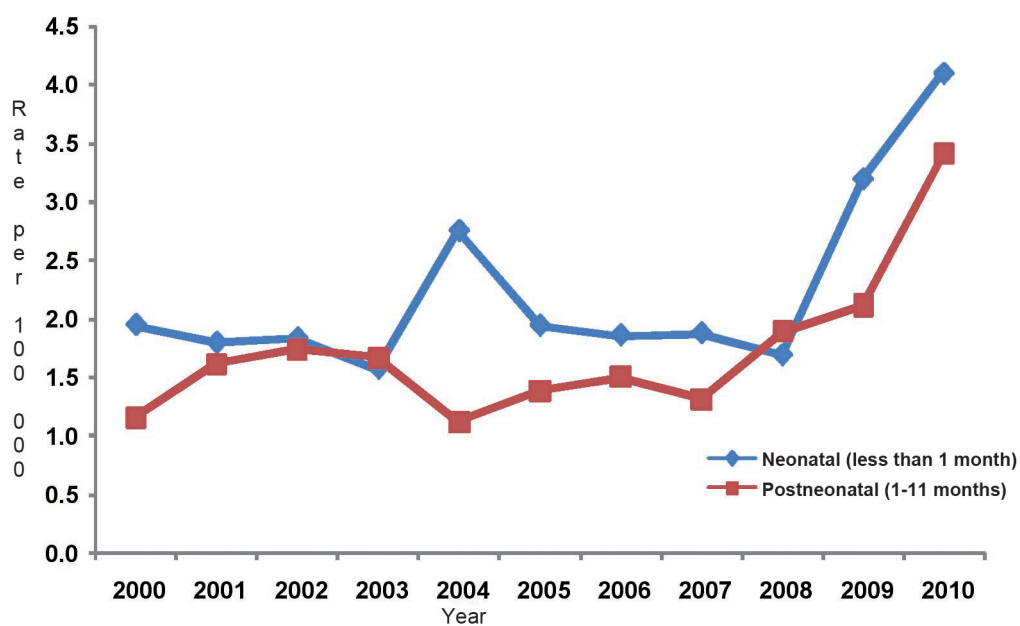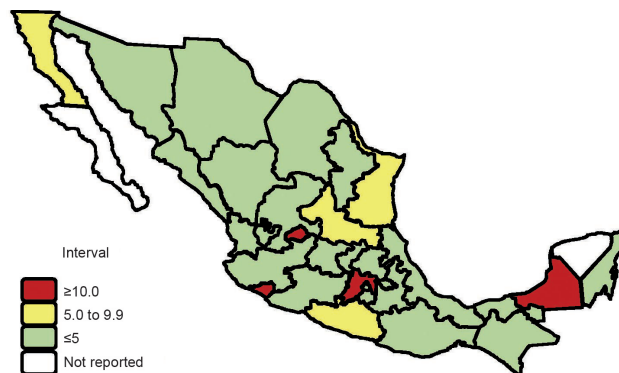

Figure 4. Infant mortality tendency due to homicide, México 2000-2010.

Table 3. Distribution of homicides in the population under 15 years of age according to type of aggression, México 2009

Type of aggression	2009	
	n	%
X95 Discharge of firearms	153	30.7
X91 Hanging, strangulation and suffocation	65	13.1
X92 Drowning and submersion	28	5.6
X99 Use of sharp objects	28	5.6
Other causes	102	20.5
Not specified	122	24.5
Total	498	100.0

Source: Reference 2.

Figure 5. Geographic distribution of deaths due to homicide in the population of children under 1 year of age acording to federal entity, México 2007-2010.

Table 4. Deaths due to homicides in minors <1 year of age according to federal entity, Mexico, 2007-2010

Region of residence	Deaths					
	2007	2008	2009	2010	Total 2007-2010	Rate*
Aguascalientes	1	1	3	5	10	11.1
Baja California			4	8	12	5.4
Campeche		1	2	3	6	10.4
Coahuila	1	1	1	1	4	2.1
Colima		3	1	1	5	12.3
Chiapas		1	4	7	12	3.2
Chiuahua	1	3	3	3	10	4.2
Mexico City	3	4	4	4	15	2.9
Durango	1	2	1	1	5	4.3
Guanajuato	5	5	2	1	13	3.3
Guerrero	4	6	6	6	22	8.6
Hidalgo		2	1		3	1.7
Jalisco	5	2	5	8	20	3.9
México	29	22	35	44	130	12.3
Michoacán		1	1		2	0.7
Morelos		2			2	1.8
Nayarit			1	2	3	4.4
Nuevo León		1	4	7	12	3.9
Oaxaca	1	1	2	3	7	2.6
Puebla	3		3	6	12	2.7
Querétaro	2	1			3	2.3
Quintana Roo		2	1		3	2.9

Table 4. Deaths due to homicides in minors <1 year of age according to federal entity, Mexico, 2007-2010 (continuation)

Region of residence	Deaths					
	2007	2008	2009	2010	Total 2007-2010	Rate*
San Luis Potosí		3	5	7	15	7.9
Sinaloa	1	1	1	1	4	2.2
Sonora	2		2	4	8	4.5
Tabasco	1	1			2	1.3
Tamaulipas			4	8	12	5.4
Tlaxcala	1	2			3	3.4
Veracruz	1	3	8	12	24	4.7
Zacatecas	1		1	2	4	3.0
Total general	63	71	105	144	383	4.9

Note: States of Baja California Sur and Yucatán did not report deaths.
Source: Dirección General de Información en Salud (DGIS).
*Per 100,000 births during that period. Total of estimated births were considered for the period.

REFERENCES

1. Escalante GF. Homicidios 2008-2009. La muerte tiene permiso. Rev Nexos 2011. Available at: http://www.nexos.com.mx/?P=leerarticulo&Article=1943189

2. Dirección General de Información en Salud (DGIS). Base de datos de defunciones 1979-2009. Sistema Nacional de Información en Salud (SINAIS). Available at: http://www.sinais.salud.gob.mx

Errata

Volume 68, Number 2, March-April 2011.

Page 104, figure legend, says "Modified from Reference 7". Should read "Source: Halstead SB. Dengue. Lancet 2007;370:1644-1652. Modified with permission."

Page 106, Table 1, First column, last line. Says "Total 2390. Should read "Total 2450."

Bottazzi ME, et al. "Bridging the innovation gap for neglected tropical disease in Mexico: capacity building for the development of a new generation of antipoverty vaccines". Pages 150-158 says "*Slim Initiative for Antipoverty Vaccine Development*". Should read "*Slim Initiative for Neglected Tropical Diseases Vaccine Development*".