

# In which geographic areas should actions be targeted to reduce HIV/AIDS mortality in Mexico?: An analysis of his magnitude, distribution, and trends by Jurisdicción Sanitaria, 1990-2015

Bravo-García, Enrique<sup>1</sup>; Magis-Rodríguez, Carlos<sup>2</sup> ; Palacios-Martínez, Manuel<sup>3</sup> ; Guarneros-Soto, Noé<sup>3</sup>

<sup>1</sup>Censida. Advisor. México; <sup>2</sup>Censida. Director of Integral Care. México; <sup>3</sup>INSP Tlalpan. México

Keywords: Mortality, HIV, AIDS, Mexico

## Introduction

In 1997, people living with HIV who had social security in Mexico, began to receive HAART, which had significantly reduced mortality in other countries. In 2003, free and universal access to TARAA was adopted as a national public health policy. However, mortality due to HIV/AIDS did not decrease as expected, with important differences between the Mexican states. Strategies to reduce mortality should be focused on specific areas. The Jurisdicciones Sanitarias (JS) are the structures of the State Health Services that must coordinate the execution of the actions of prevention and control of HIV/AIDS.

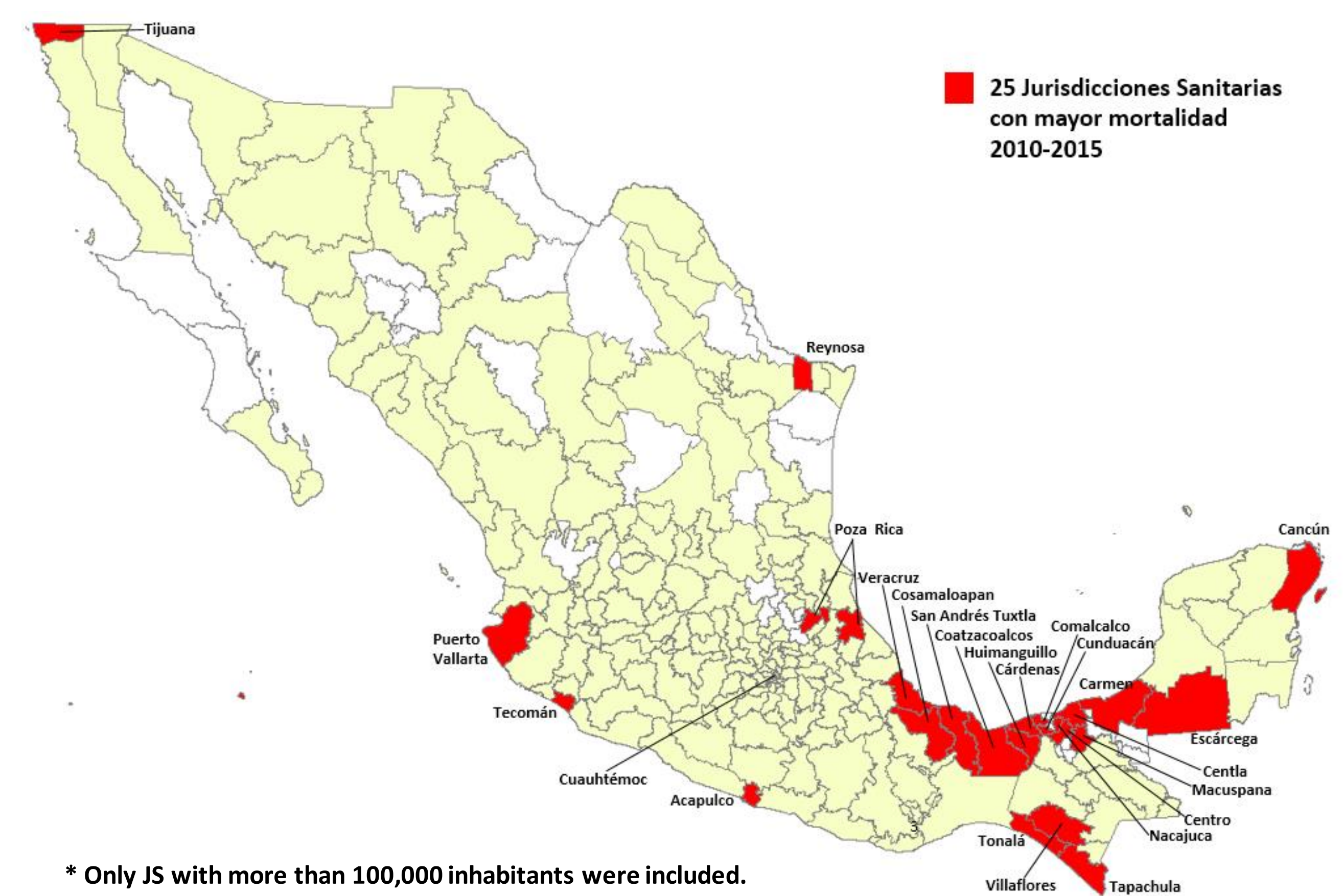
## Materials and methods

Information on deaths due to HIV/AIDS was obtained from INEGI. For the calculation of crude and standardized rates, the official population estimates of CONAPO were used. The JoinPoint regression model was used to analyze epidemiological trends.

## Results

The magnitude, distribution, and trends of HIV/AIDS mortality in Mexico by JS were analyzed. The 25 JS with higher rates of HIV/AIDS mortality were identified and their epidemiological trends were analyzed. Although they have only 11% of the population of the country, they account for 28.6% of the total deaths due to HIV/AIDS. They have a standardized mortality rate that is at least twice the national rate (3.9 deaths x 100,000 inhabitants), and among them, seven JS have a rate three or more times higher.

The highest average annual mortality rates were observed in Tonalá, Chiapas (14.4 per 100,000 inhabitants), Veracruz, Veracruz (14.3 per 100,000), Carmen, Campeche (13.7 per 100,000), Centla, Tabasco (13.5 per 100,000 inhabitants), Cosamaloapan, Veracruz (13.3 per 100,000), Coatzacoalcos, Veracruz (13.3 per 100,000 inhabitants and Cárdenas, Tabasco (11.6 per 100,000 inhabitants). These 25 JS are located mainly in coastal areas, tourist sites, migration corridors or border areas of the country.



The most recent trend estimated by JoinPoint regression model, shows that in 9/25 JS HIV/AIDS mortality increased, 8/25 decreased, and 8/25 there was no change.

Order	Jurisdicción Sanitaria	HIV/AIDS standardized mortality rate (2010-2015)*	Last trend	APC	CI 95%	Statistic Test (t)	Prob > t	Most recent trend
1	Tonalá, Chis.^	14.4	1995 - 2015	4.4^	[1.8 - 7.1]	0	0	Increase
2	Veracruz, Ver.^	14.3	2010 - 2015	-6.6^	[-10.5 - -2.6]	0	0	Decrease
3	Carmen, Camp.^	13.7	1990 - 2015	5.7^	[3.6 - 7.8]	0	0	Increase
4	Centla, Tab.^	13.5	2009 - 2015	-11.0^	[-20.2 - -0.8]	0	0	Decrease
5	Cosamaloapan, Ver.^	13.3	2006 - 2015	-7.1^	[-11.7 - -2.2]	0	0	Decrease
6	Coatzacoalcos, Ver.^	12.9	2003 - 2015	1.5^	[0.1 - 2.8]	0	0	Increase
7	Cárdenas, Tab.*	11.6	2009 - 2015	-1.2	[-9 - 7.3]	0.8	0.8	No change
8	Macuspana, Tab.*	11.1	2003 - 2015	-1.6	[-5.3 - 2.2]	0.4	0.4	Estable
9	Cunduacán, Tab.^	11	1994 - 2015	5.6^	[2.2 - 9.2]	0	0	Increase
10	Centro, Tab.*	10.9	2009 - 2015	-0.5	[-6.1 - 5.5]	-0.2	0.9	No change
11	Huimanguillo, Tab.^	10.6	1996 - 2015	5.9^	[2.4 - 9.6]	0	0	Increase
12	Acapulco, Gro.^	10.4	2001 - 2015	-2.6^	[-4 - -1.3]	0	0	Decrease
13	Comalcalco, Tab.^	9.9	1994 - 2015	3.3^	[1.1 - 5.6]	0	0	Increase
14	Tapachula, Chis.^	9.8	2006 - 2015	-8.1^	[-10.9 - -5.3]	0	0	Decrease
15	San Andrés Tuxtla, V	9.8	2004 - 2015	-1.6	[-4.5 - 1.5]	-1.1	0.3	No change
16	Cancún, Q. Roo^	9.4	1990 - 2015	2.8^	[1.5 - 4.1]	0	0	Increase
17	Cuauhtémoc, CdMx^	9.3	1995 - 2015	-5.7^	[-7.2 - -4.1]	0	0	Decrease
18	Nacajuca, Tab.^	9.3	1993 - 2015	3.5^	[0.9 - 6.3]	0	0	Increase
19	Escárcega, Camp.^	9.1	1998 - 2015	5.5^	[1.5 - 9.7]	0	0	Increase
20	Tijuana, BC^	8.4	1996 - 2015	-3.5^	[-4.5 - 2.5]	0	0	Decrease
21	Poza Rica, Ver.*	8.4	2005 - 2015	-0.5	[-3.7 - 2.8]	0.7	0.7	No change
22	Tecomán, Col.*	8.2	1997 - 2015	0.8	[-2.1 - 3.8]	0.6	0.6	No change
23	Puerto Vallarta, Jal.*	8.2	1993 - 2015	0.3	[-1.5 - 2.1]	0.3	0.8	No change
24	Villaflores, Chis.^	7.8	2004 - 2015	-7.3^	[-13.6 - -0.5]	0	0	Decrease
25	Reynosa, Tamps.*	7.7	2008 - 2015	-3.9	[-9.9 - 2.5]	-1.3	0.2	No change

## Conclusions

Universal access to HAART has reduced HIV/AIDS mortality rates in Mexico from 2008 to 2015. However, there are huge gaps between regions. The 25 geographic and operational areas (JS) were identified, where actions aimed at reducing HIV/AIDS mortality in Mexico should be focused. It is the first study that analyzes a health problem (HIV/AIDS mortality) in all JS of Mexico.

HIV/AIDS standardized mortality rate

