

# WELCOME

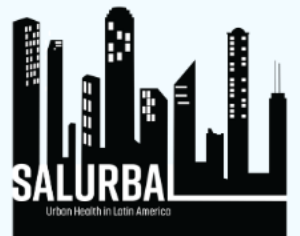
## INEQUALITY IN MORTALITY OUTCOMES IN LATIN AMERICAN CITIES: DATA FROM THE SALURBAL PROJECT WEBINAR

JULY 1, 2020  
11:00 AM ET



DREXEL UNIVERSITY  
Urban Health  
Collaborative  
*Dornsife School of Public Health*

LAC-URBAN HEALTH  
*Urban Health Network for Latin America and the Caribbean*



# THE SALURBAL PROJECT

## *Salud Urbana en América Latina* – Urban Health in Latin America

- An initiative of the Urban Health Network for Latin America and the Caribbean (LAC-Urban Health).
- Implemented by Drexel University and 14 partners primarily based in Latin America.
- Funded through Wellcome Trust's "Our Planet, Our Health" global initiative.



# AN INTERNATIONAL NETWORK OF COLLABORATORS

**Drexel University**, Philadelphia, Pennsylvania, USA

**National University of Lanus**, Buenos Aires, Argentina

**Federal University of Minas Gerais**, Belo Horizonte, Brazil

**Universidade de Sao Paulo**, Sao Paulo, Brazil

**Oswaldo Cruz Foundation**, Salvador Bahia, Brazil

**Oswaldo Cruz Foundation**, Rio de Janeiro, Brazil

**Universidad de Chile**, Santiago, Chile

**Pontífica Universidad Católica de Chile**, Santiago, Chile

**Universidad de los Andes**, Bogotá, Colombia

**Instituto Nacional de Salud Pública**, Mexico City, Mexico

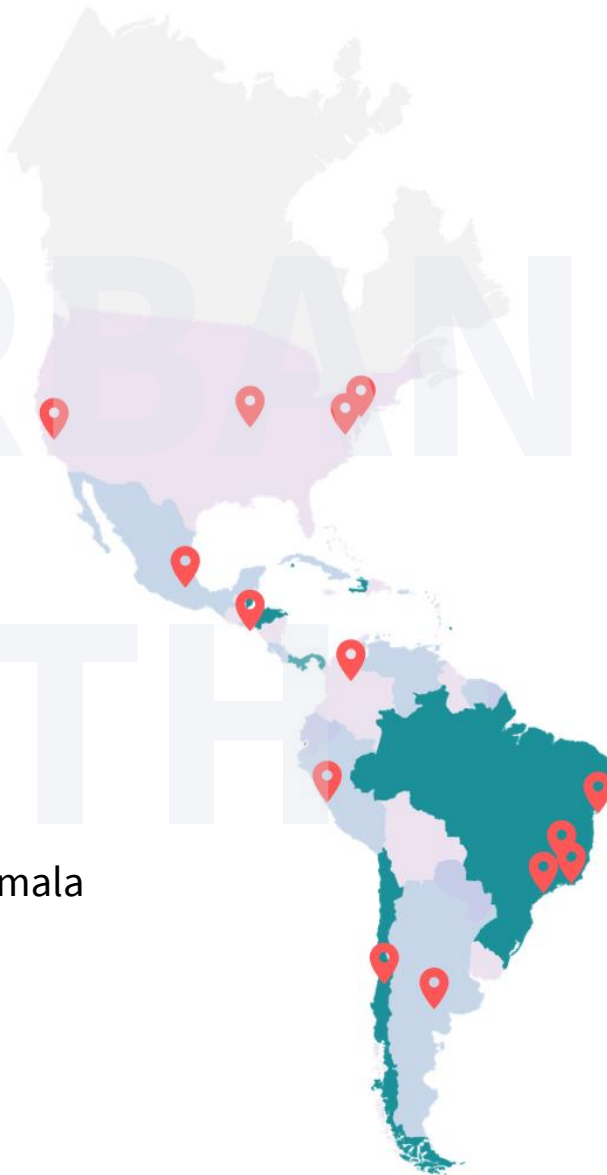
**Universidad Peruana Cayetano Heredia**, Lima, Peru

**Institute of Nutrition of Central America and Panama (INCAP)**, Guatemala  
City, Guatemala

**Pan American Health Organization**, Washington, D.C., USA

**University of California at Berkeley**, Berkeley, California, USA

**Washington University in St Louis**, St Louis, Missouri, USA



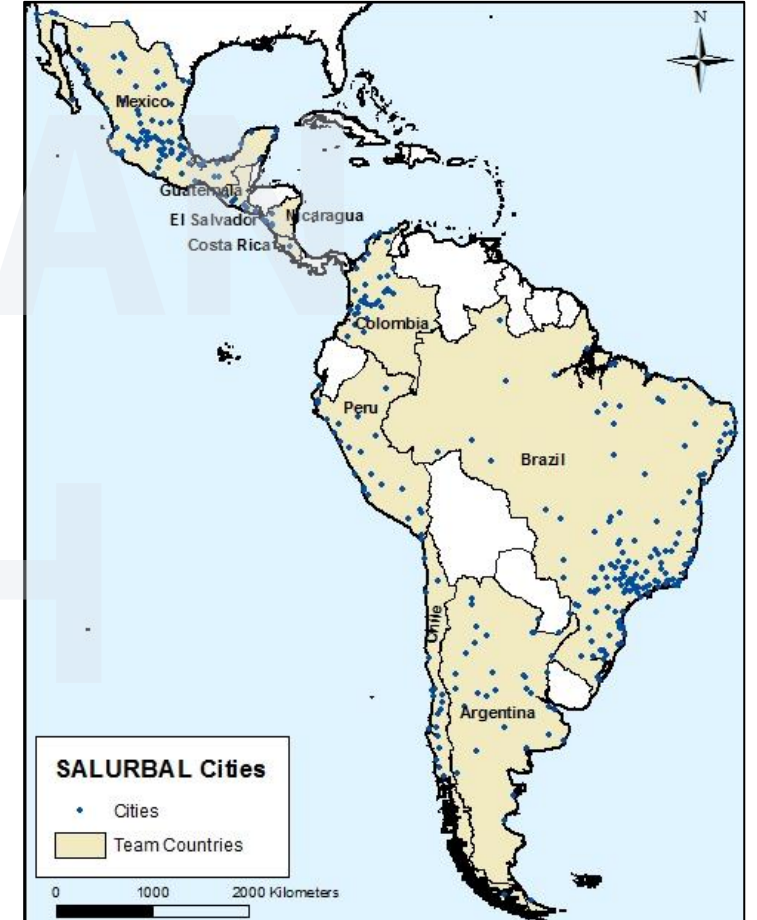
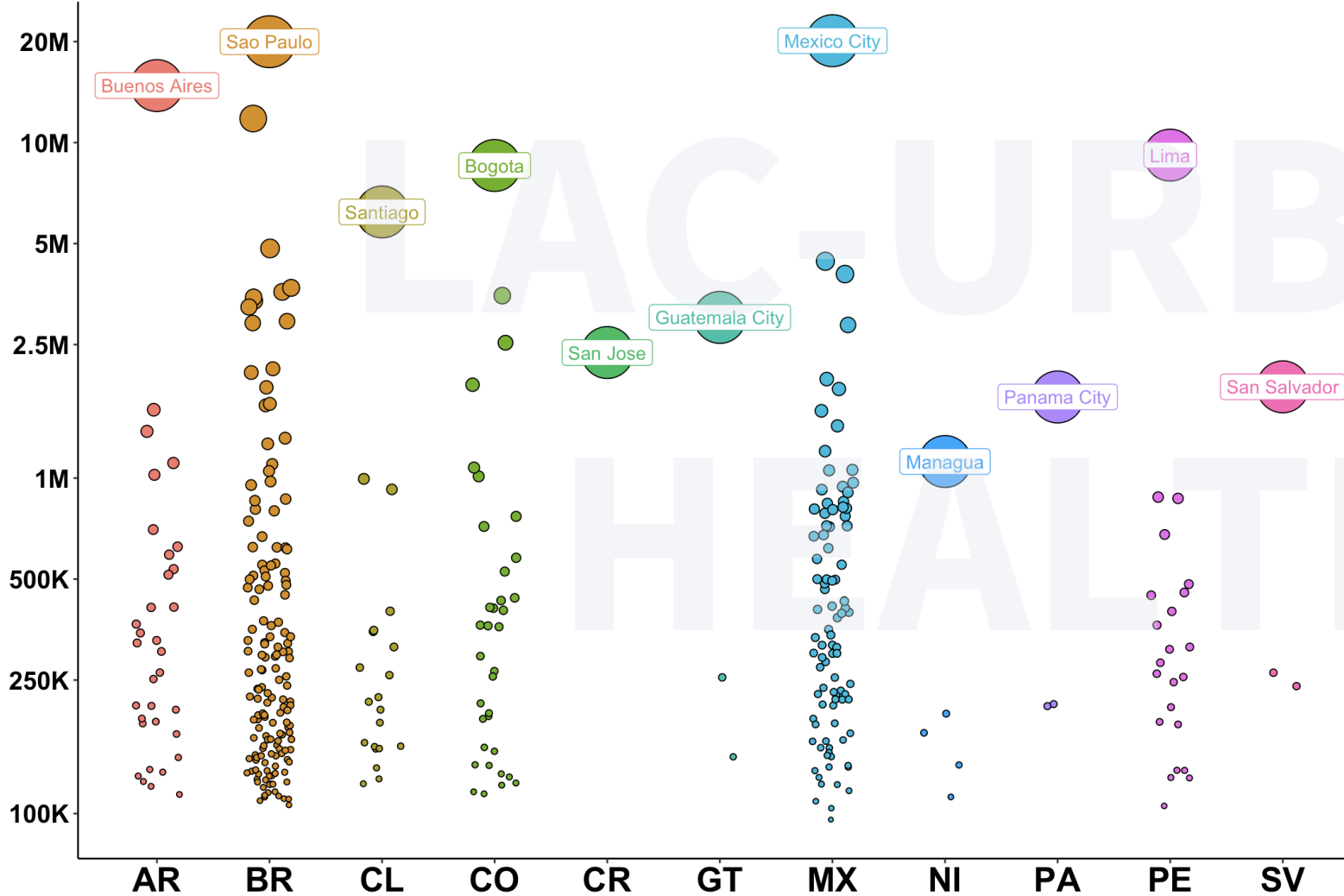
# SALURBAL...

1. ...Analyzes **urban data** to reveal how **cities impact health** outcomes, health inequities, and environmental sustainability.
2. ...Evaluates the **impact of urban policies and interventions** on health and the environment.
3. ...Uses systems approaches to **gain insight** into the dynamic relationships between the urban environment, health, and environmental impact.
4. ...Works with policymakers and the media to **disseminate our research** so that it can be used to create change.



# SALURBAL data

Population of 371 SALURBAL Cities (2010)



# SALURBAL data

- SALURBAL has compiled data for 371 cities of 100,000 people or more in 11 countries.
- This data has been linked to sub-city units and neighborhoods in these cities.

Health	Built Environments	Social Equity
<ul style="list-style-type: none"> <li>• <b><u>Deaths and causes of death</u></b></li> <li>• <b><u>Life expectancy</u></b></li> <li>• Health risk factors</li> <li>• Health-related behaviors</li> <li>• Violence</li> </ul>	<ul style="list-style-type: none"> <li>• Land use and urban form</li> <li>• Transit options</li> <li>• Traffic congestion</li> <li>• Air pollution</li> <li>• Walkability</li> <li>• Green space</li> <li>• Water and sanitation</li> <li>• Housing</li> </ul>	<ul style="list-style-type: none"> <li>• Poverty</li> <li>• Income inequality</li> <li>• Housing conditions</li> <li>• Education</li> <li>• Employment</li> </ul>



# WEBINAR SPEAKERS



**Dr. Ana Ortigoza**

Inequalities in infant mortality in 286 cities in Latin America



**Dr. Usama Bilal**

Inequalities in adult mortality and life expectancy in 363 cities in Latin America





# INFANT MORTALITY AND THE URBAN ENVIRONMENT IN LATIN AMERICA

**Ana Ortigoza**

[afo25@drexel.edu](mailto:afo25@drexel.edu)

Twitter: @AnaOrtigoza14







Infant wellness and survival depends on how we imagine and design social, political, and economic structures in our societies



# INFANT MORTALITY: TECHNICAL NOTES

## What is an infant mortality rate?

- Number of deaths during the first year of life per 1,000 live births

## What are the main causes of infant mortality?

- Premature births and birth complications
- Congenital defects
- Pneumonia and diarrhea
- Other vaccine-preventable infections

## How can urban context influence infant mortality?

- Economic determinants
- Social determinants
- Environmental determinants



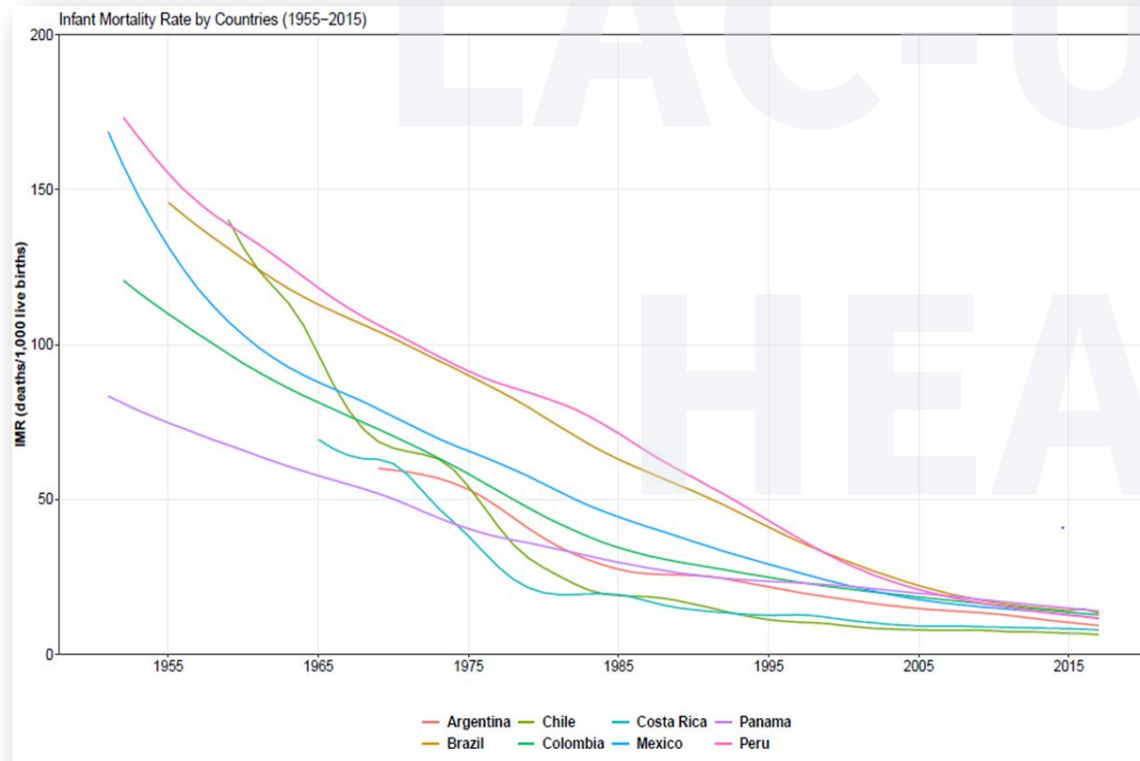
# WHAT IS SALURBAL TRYING TO UNDERSTAND?

- The extent to which variations in infant mortality rates in cities explain differences in country-level infant mortality rates
- Which characteristics of the urban environment are linked to infant mortality in cities
- What these results suggest about actions at the local level that could achieve further reductions in infant mortality in Latin America

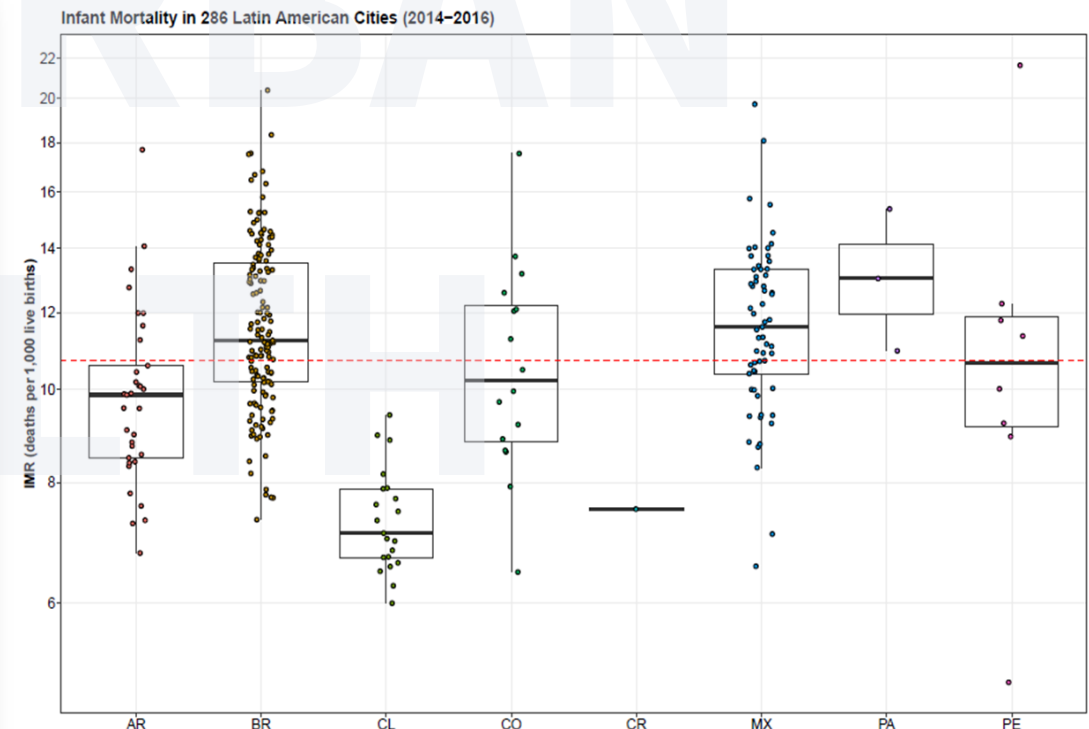


# VARIABILITY IN INFANT MORTALITY RATES ACROSS COUNTRIES IS EXPLAINED BY DIFFERENCES IN INFANT MORTALITY RATES ACROSS CITIES

**IMR trends in SALURBAL countries  
(1955-2015)** Source: UNIMEG



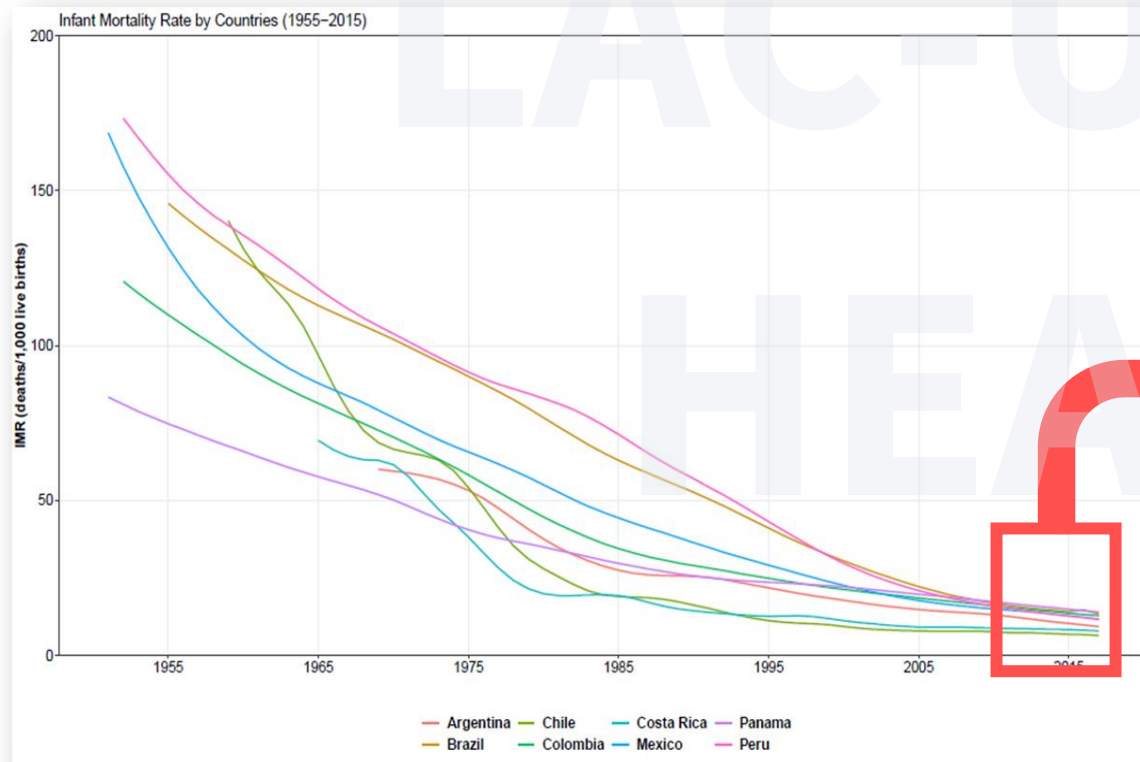
**IMR in SALURBAL cities by countries  
(2014-2016)** Source: SALURBAL project



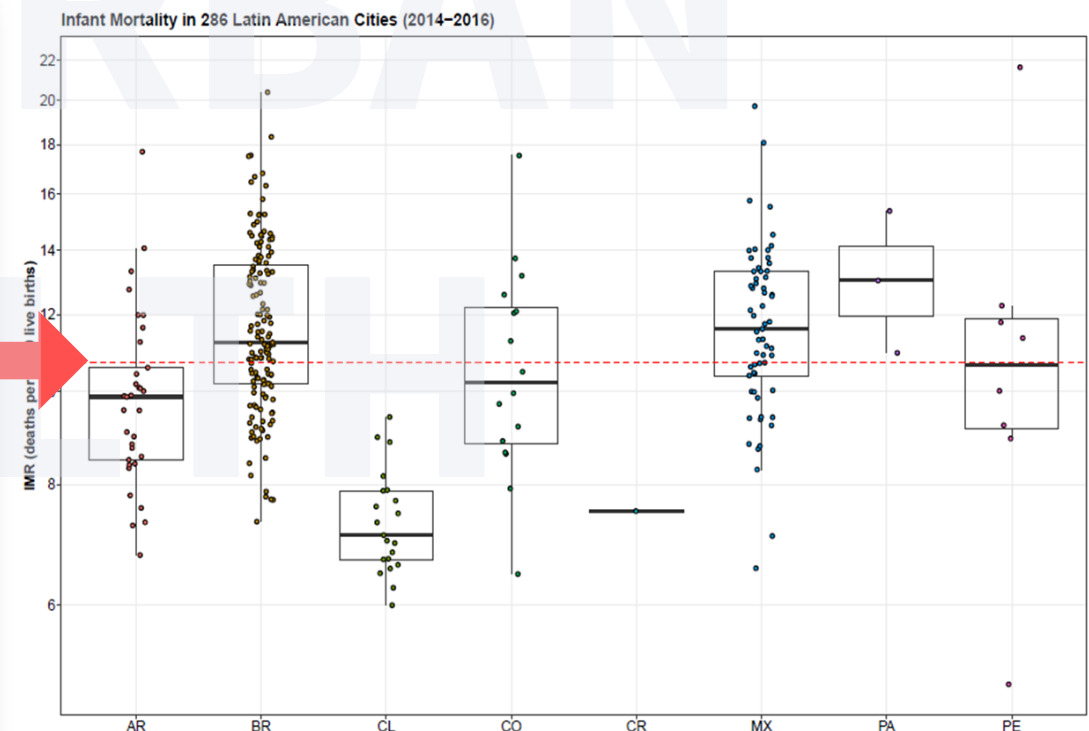
**IMR** = number of deaths before 1 year of age among babies born alive, per 1,000 live births

# VARIABILITY IN INFANT MORTALITY RATES ACROSS COUNTRIES IS EXPLAINED BY DIFFERENCES IN INFANT MORTALITY RATES ACROSS CITIES

**IMR trends in SALURBAL countries  
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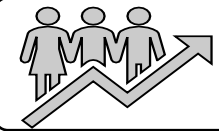
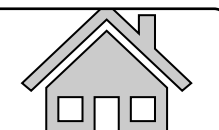
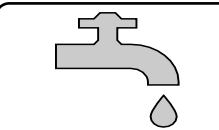

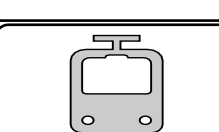
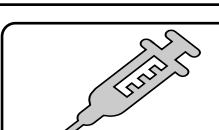
**IMR in SALURBAL cities by countries  
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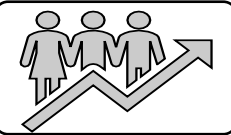
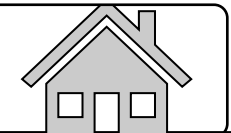


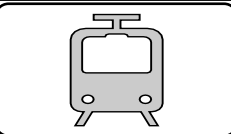
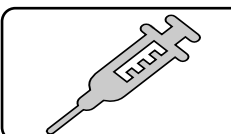
# WHICH CHARACTERISTICS OF THE URBAN ENVIRONMENT ARE LINKED TO INFANT MORTALITY IN CITIES?

SOCIOECONOMIC SCORES

	<h2>Population growth</h2>	<p>City population growth 2010-2015</p>
	<h2>Housing and living conditions</h2>	<ul style="list-style-type: none"> <li>- % households with piped water in the house</li> <li>- % of households with overcrowding conditions (3+/room)</li> <li>- % population 15-17 age attending school</li> </ul>
	<h2>Service provision</h2>	<ul style="list-style-type: none"> <li>- % of households with water connected to municipal network</li> <li>- % of households with sewage system connected to municipal network</li> </ul>
	<h2>Population education</h2>	<ul style="list-style-type: none"> <li>- % population 25+≥ high school level</li> <li>- % population 25+≥ university level</li> </ul>
	<h2>Mass transit availability</h2>	<p>Presence of either subway or bus rapid transit (BRT) networks</p>
	<h2>Access to healthcare</h2>	<p>% of MMR1 vaccines coverage among infants</p>

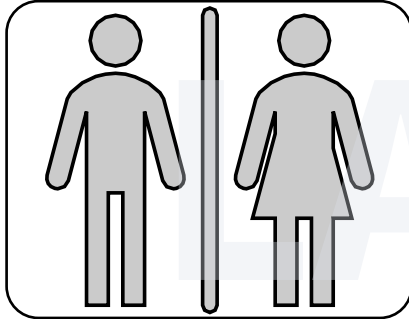


## WHICH CHARACTERISTICS OF THE URBAN ENVIRONMENT ARE LINKED TO INFANT MORTALITY IN CITIES?

SOCIOECONOMIC SCORES		<b>Population growth</b>	↓	<b>5% lower IMR</b>
		<b>Housing and living conditions</b>	↓	<b>14% lower IMR</b>
		<b>Service provision</b>	↓	<b>12% lower IMR</b>
		<b>Population education</b>		NO ASSOCIATION
		<b>Mass transit availability</b>	↓	<b>10% lower IMR</b>
		<b>Access to healthcare</b>		NO ASSOCIATION

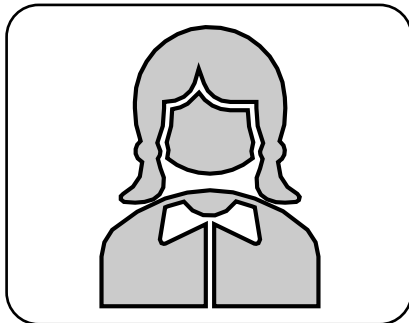
# WOMEN'S EMPOWERMENT IS LINKED TO LEVELS OF INFANT MORTALITY

## WOMEN'S EMPOWERMENT SCORES



### Women's labor force participation

- Ratio of female/male population over age 25 with more than **high school** level education
- Ratio of female/male population over age 25 with more than **university** level education
- Labor force participation among women
- Ratio of female/male population participating in the labor force

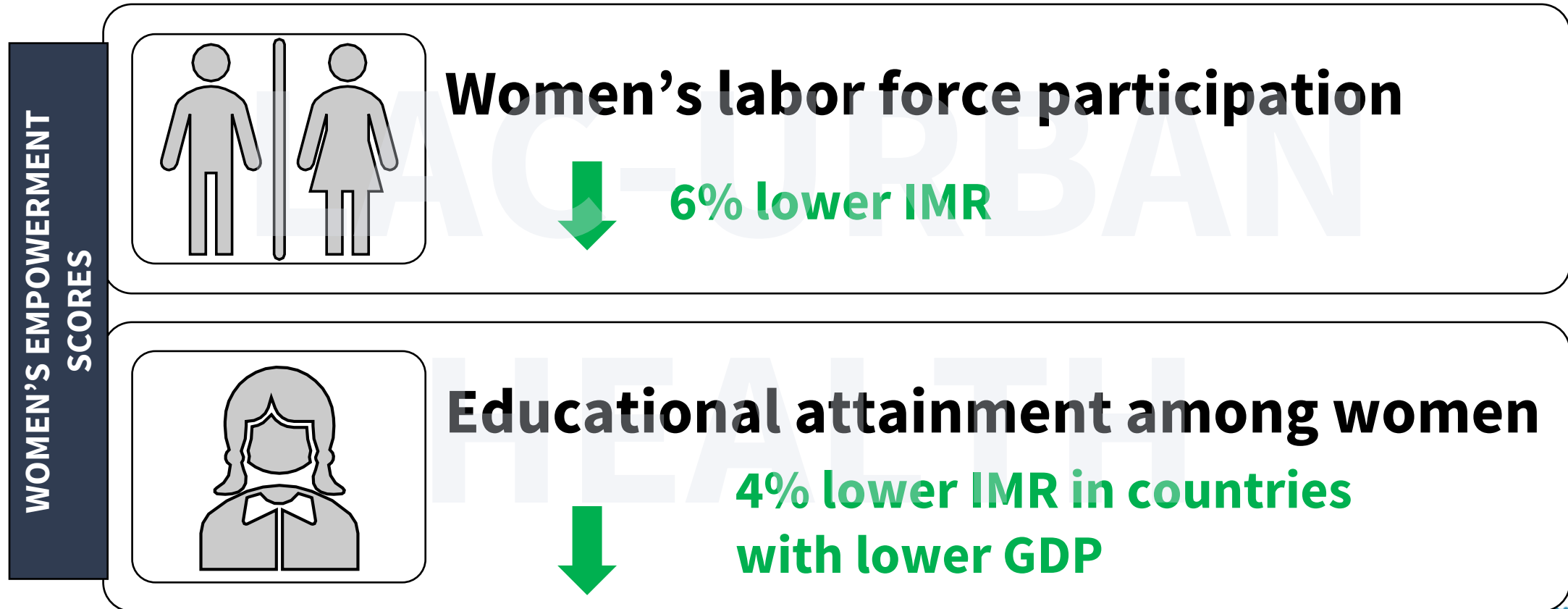


### Educational attainment among women

- Percent of the female population over age 25 with more than **high school** level education
- Percent of the female population over age 25 with more than **university** level education



# HOW IS WOMEN'S EMPOWERMENT LINKED TO INFANT MORTALITY?



# TO ACHIEVE FURTHER REDUCTIONS IN INFANT MORTALITY IN LATIN AMERICA, INTERVENTIONS IN THE URBAN CONTEXT SHOULD ALSO BE CONSIDERED MATERNAL AND CHILD HEALTH INTERVENTIONS



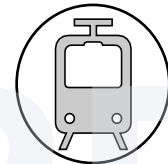
## Living conditions

- Urban redevelopment in slums
- Housing improvement programs



## Service Provision

- Affordable water & sanitation services
- Sanitation design & expansion in cities



## Mass Transit

- Network expansion
- Accessible & affordable public transportation



## Women's empowerment

- Foster women's social & economic development
- Girls' education

## Maternal and infant mortality prevention programs

Breastfeeding education  
Prenatal care & skilled birth  
Vaccine delivery

Nutritional supplements  
Oral rehydration & antibiotic therapy



# CONCLUSIONS

**Cities** are vital to reducing infant mortality rates in Latin America



**Local strategies** to prevent infant deaths need to be **comprehensive**



**Adequate city services and ensuring women's social participation** are important parts of infant-targeted health interventions



**NEW DATA BRIEF COMING SOON**

**“INFANT MORTALITY IN LATIN  
AMERICAN CITIES: DATA FROM THE  
SALURBAL PROJECT”**







TWO NEIGHBORHOODS SIDE BY SIDE IN SANTA FE, MEXICO CITY | JOHNNY MILLER / MEDIADRUIMAGES.COM

# INEQUALITIES IN ADULT MORTALITY AND LIFE EXPECTANCY IN LATIN AMERICAN CITIES

**Usama Bilal**

ub45@drexel.edu

Twitter: @usama\_bilal



# INEQUALITIES IN ADULT MORTALITY AND LIFE EXPECTANCY IN LATIN AMERICAN CITIES

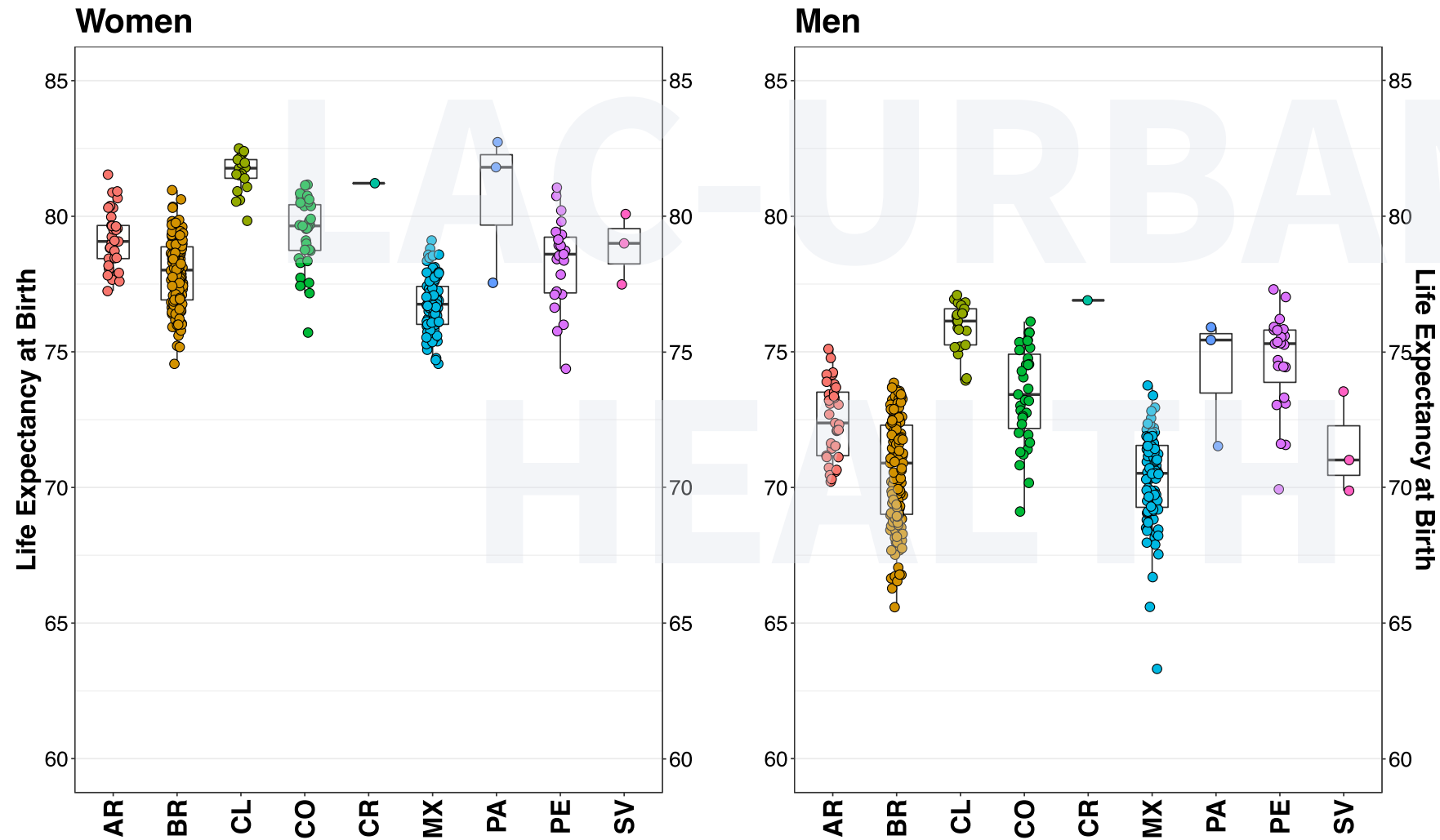
How does life expectancy vary **between** Latin American Cities?

How do **mortality profiles** vary across Latin American Cities?

How does life expectancy vary **within** large Latin American Cities?



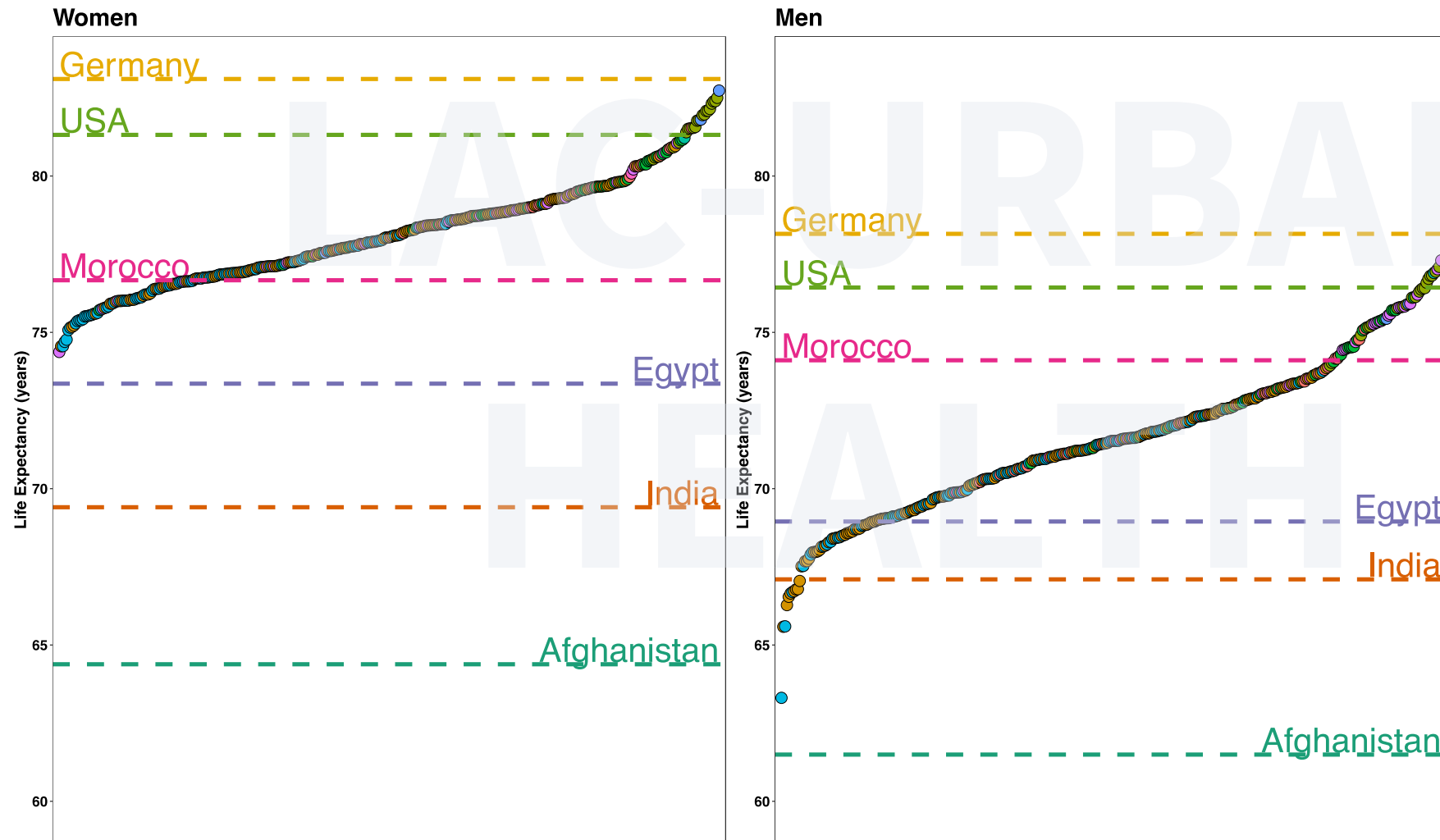
# HOW DOES LIFE EXPECTANCY VARY ACROSS LATIN AMERICAN CITIES?



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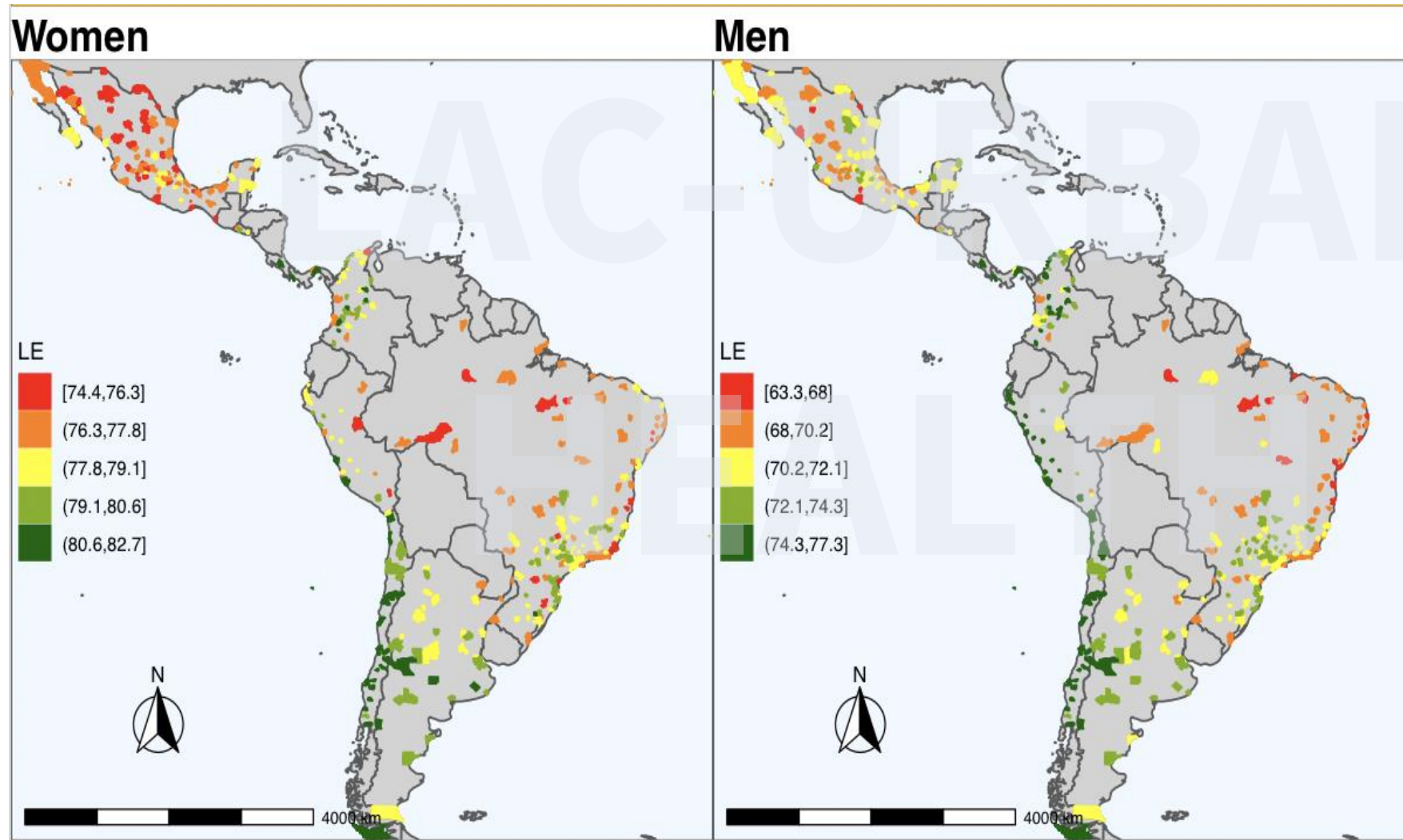


# HOW DOES LIFE EXPECTANCY VARY ACROSS LATIN AMERICAN CITIES?





# HOW DOES LIFE EXPECTANCY VARY ACROSS LATIN AMERICAN CITIES?





# INEQUALITIES IN ADULT MORTALITY AND LIFE EXPECTANCY IN LATIN AMERICAN CITIES

How does life expectancy vary between Latin American Cities?



**How do mortality profiles vary across Latin American Cities?**




How does life expectancy vary within large Latin American Cities?



# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

## CAUSE OF DEATH CATEGORIES

 **CMNN:** Communicable, maternal, neonatal, and nutritional causes

 **CANCER**

 **CVD/NCD:** Cardiovascular disease, non-communicable disease

 **UNINTENTIONAL INJURIES**

 **VIOLENT OR INTENTIONAL INJURIES**

## EXAMPLES

Influenza, diarrhea, Dengue

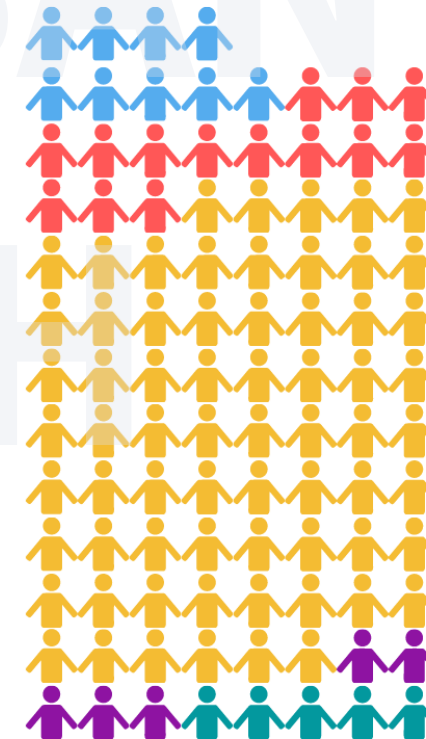
Lung cancer, breast cancer

Stroke, heart attack, liver disease, diabetes

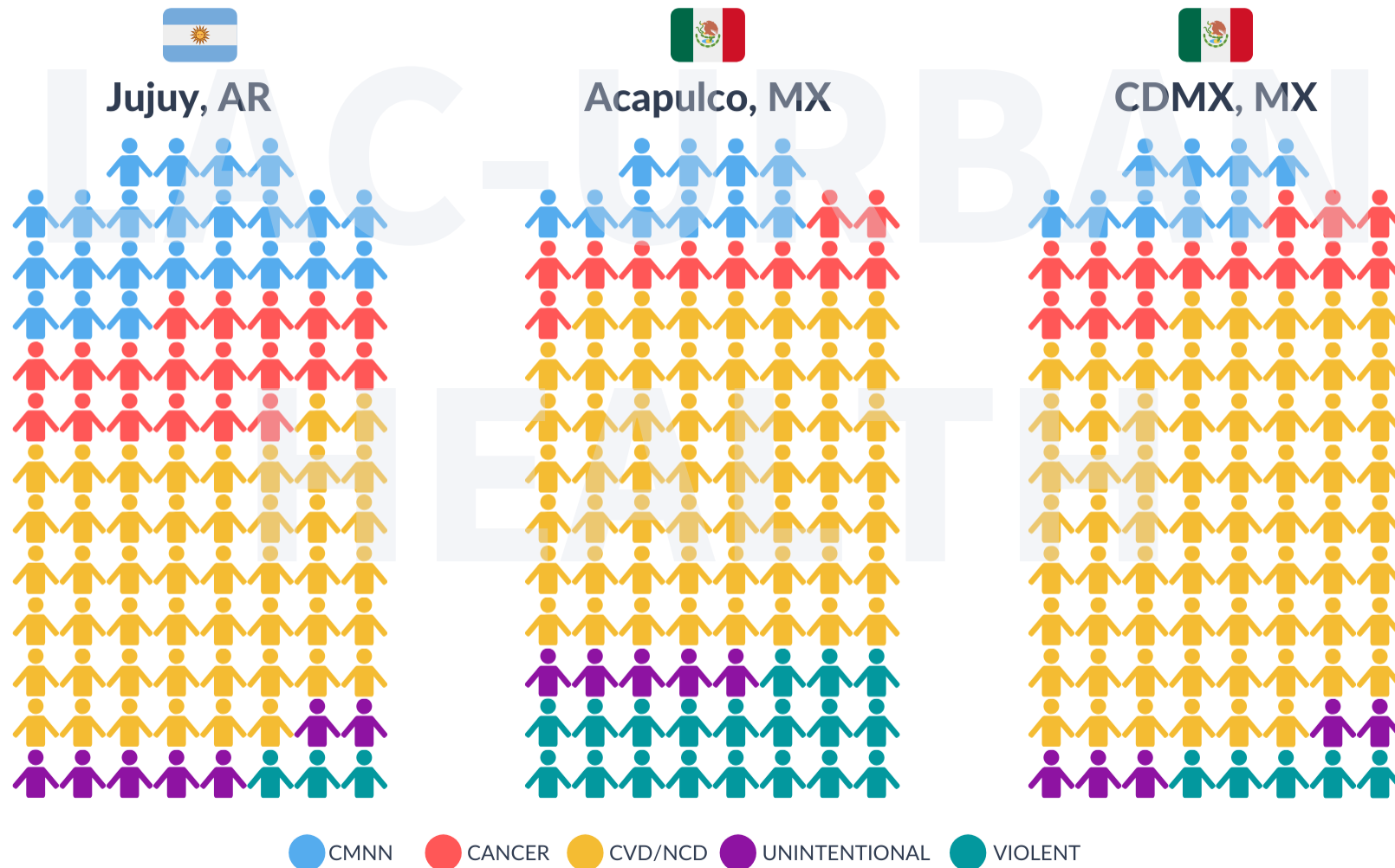
Traffic crashes, drug overdoses

Homicides, suicides

## CDMX, MX

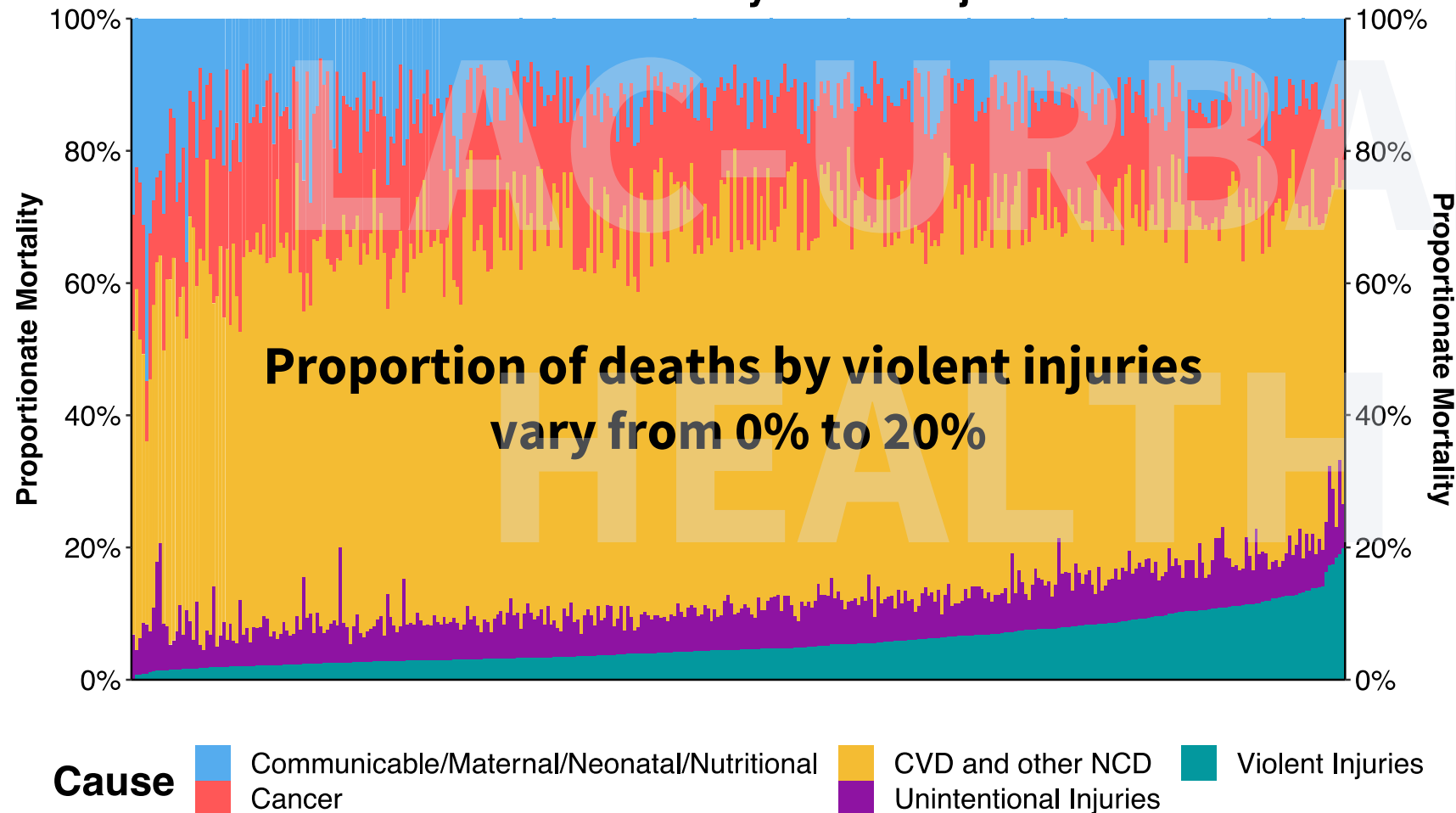


# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?



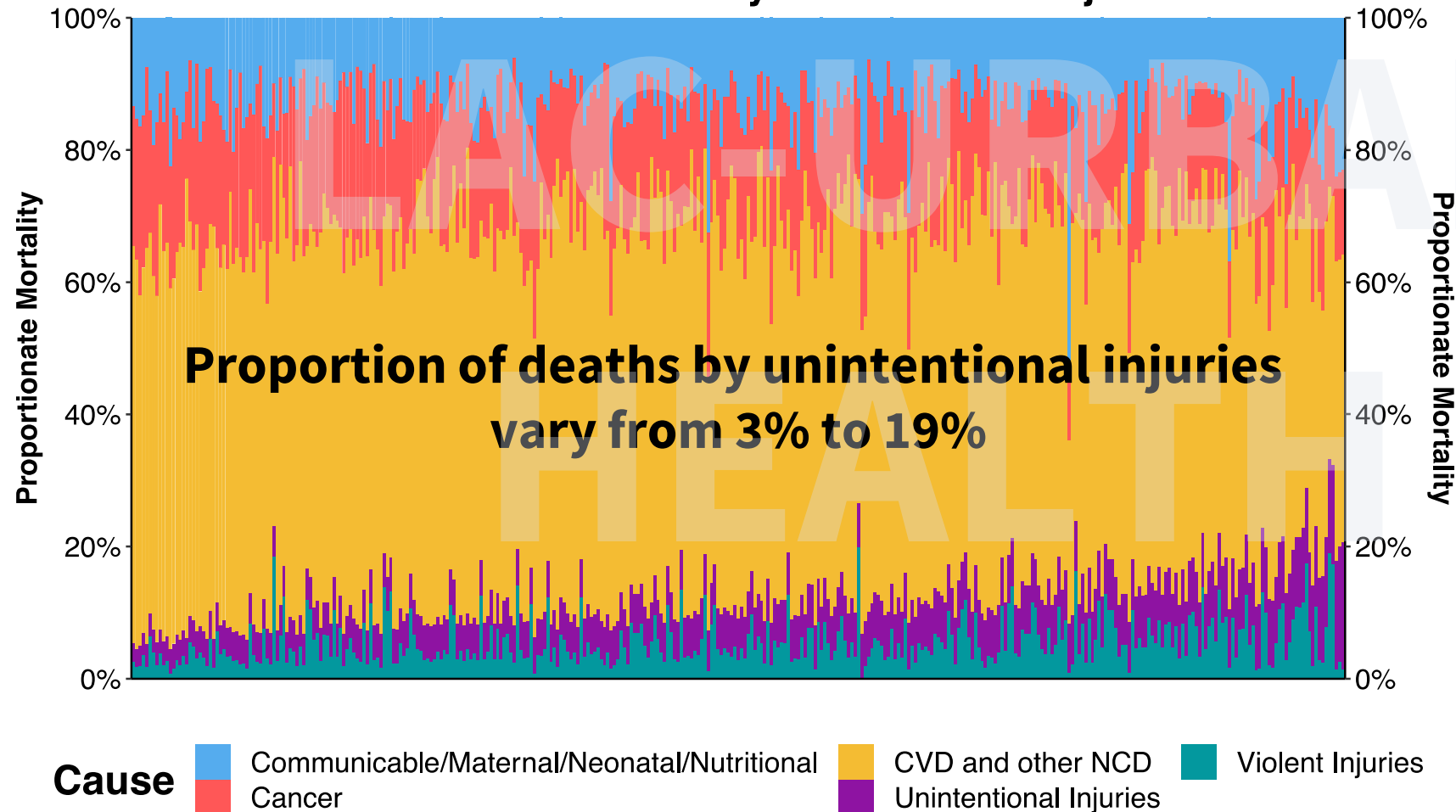
# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

363 SALURBAL cities ordered by violent injuries



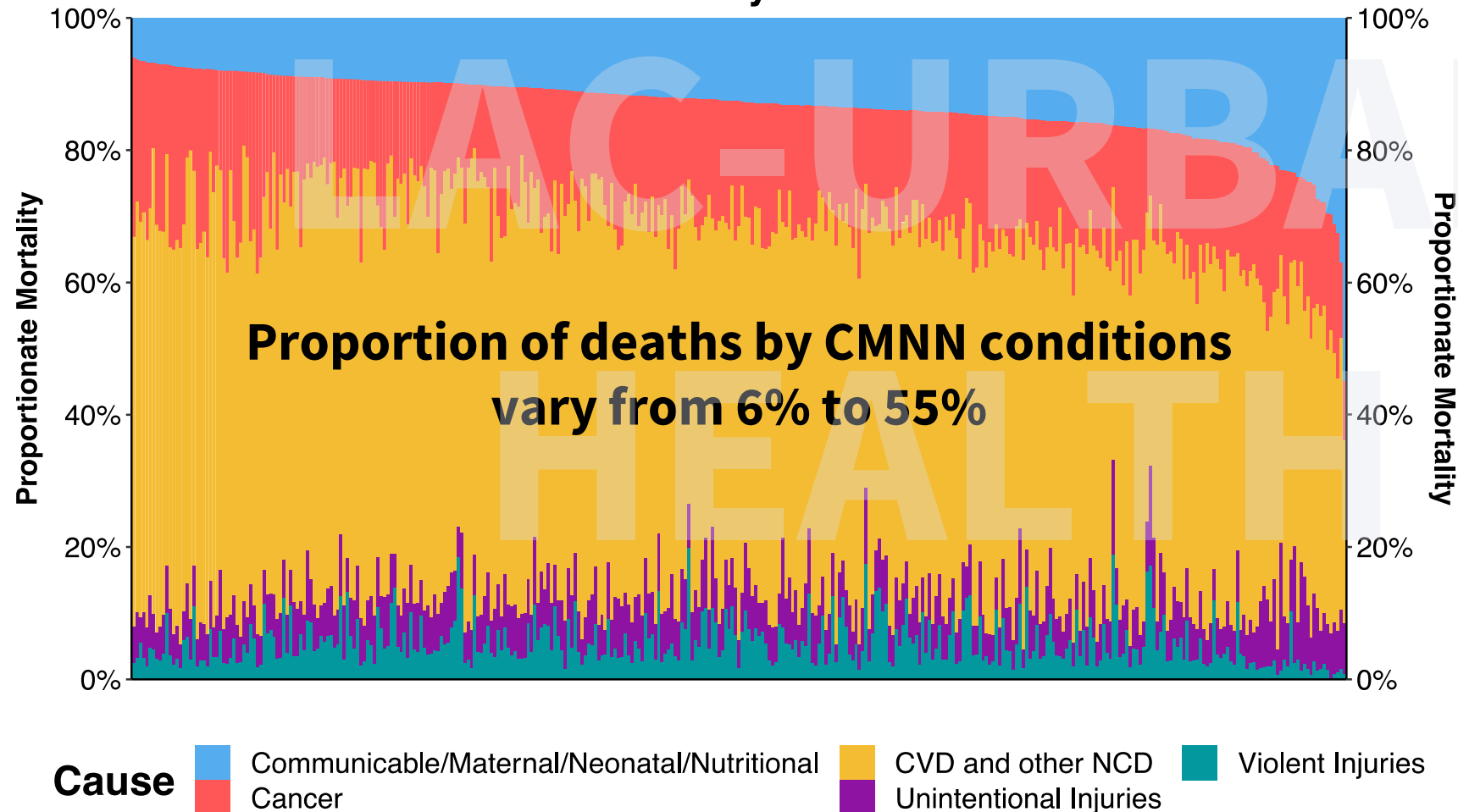
# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

363 SALURBAL cities ordered by unintentional injuries



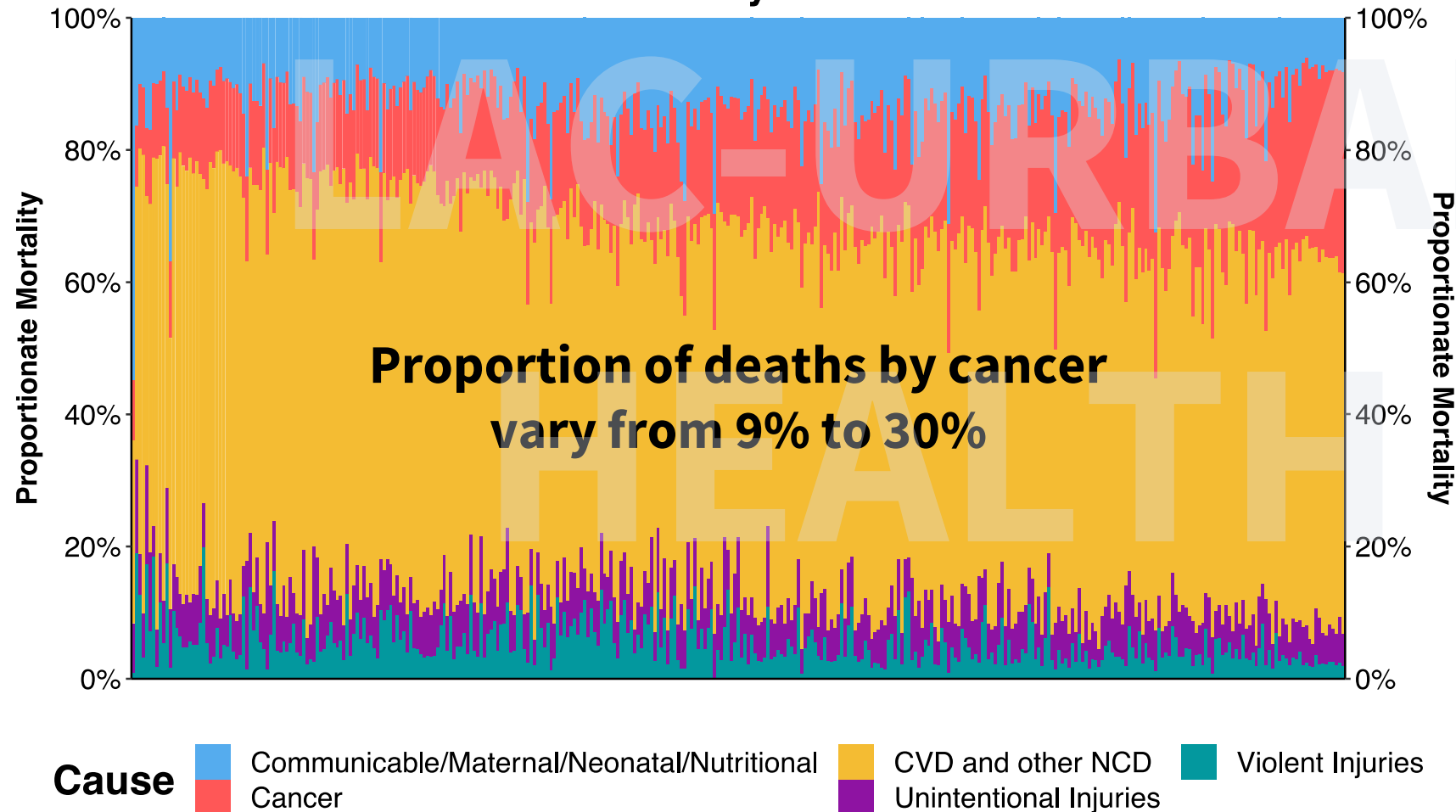
# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

363 SALURBAL cities ordered by CMNN deaths



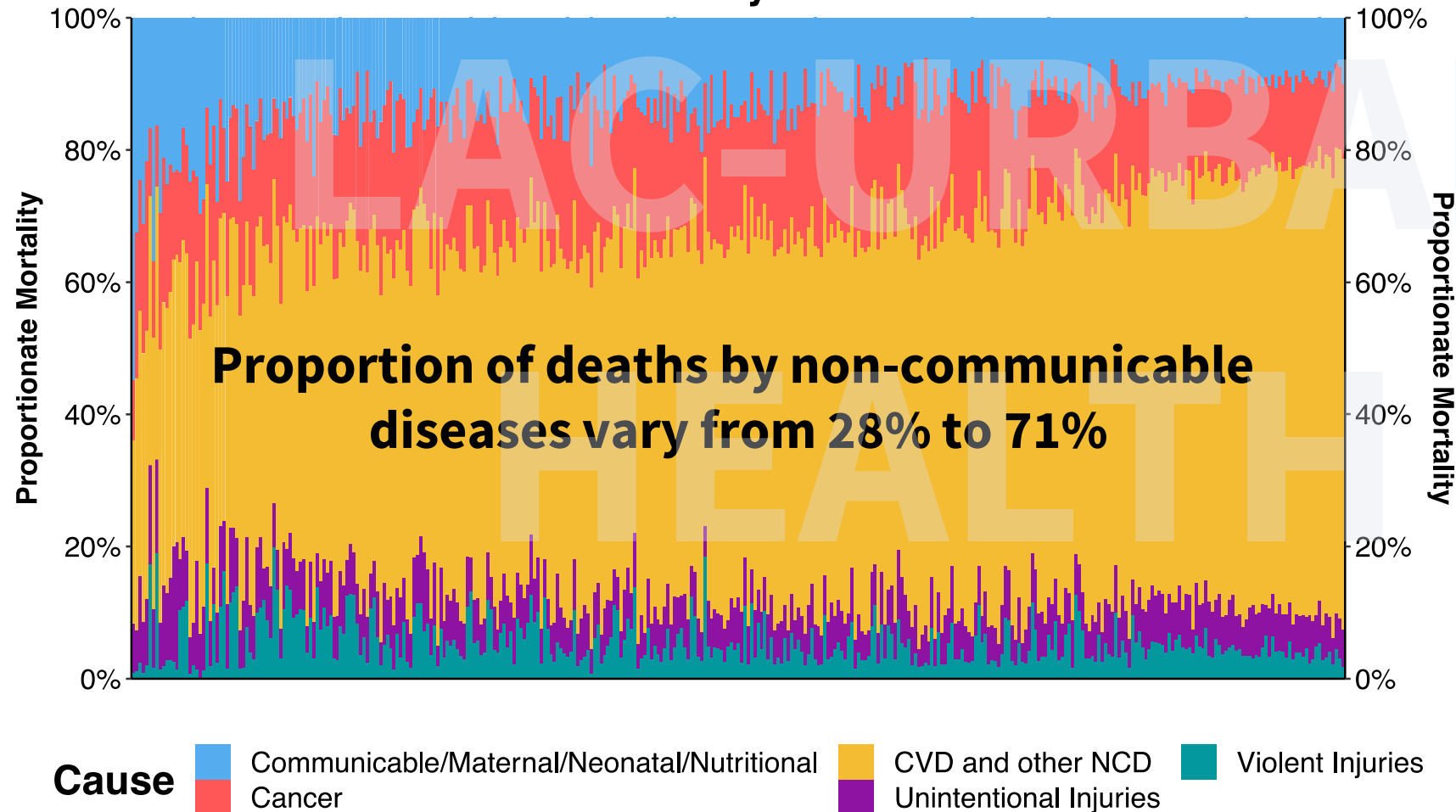
# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

363 SALURBAL cities ordered by cancer deaths



# HOW DO MORTALITY PROFILES VARY ACROSS LATIN AMERICAN CITIES?

363 SALURBAL cities ordered by non-communicable disease deaths





# INEQUALITIES IN ADULT MORTALITY AND LIFE EXPECTANCY IN LATIN AMERICAN CITIES

How does life expectancy vary between Latin American Cities?



How do mortality profiles vary across Latin American Cities?



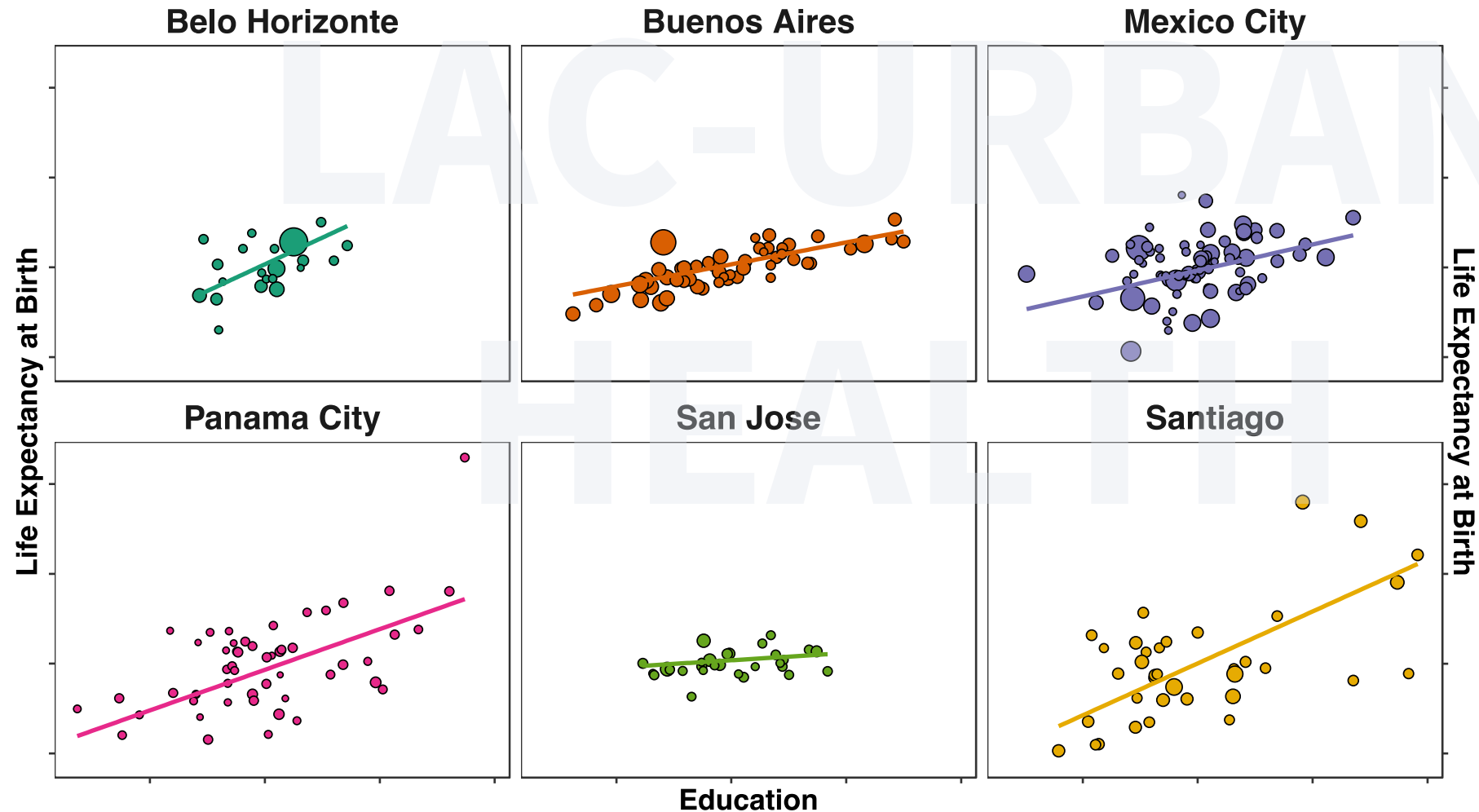
**How does life expectancy vary within large Latin American Cities?**

*Bilal et al. (The Lancet Planetary Health)*



# HOW DOES LIFE EXPECTANCY VARY WITHIN LARGE LATIN AMERICAN CITIES?

## Women



# HOW DOES LIFE EXPECTANCY VARY WITHIN LARGE LATIN AMERICAN CITIES?

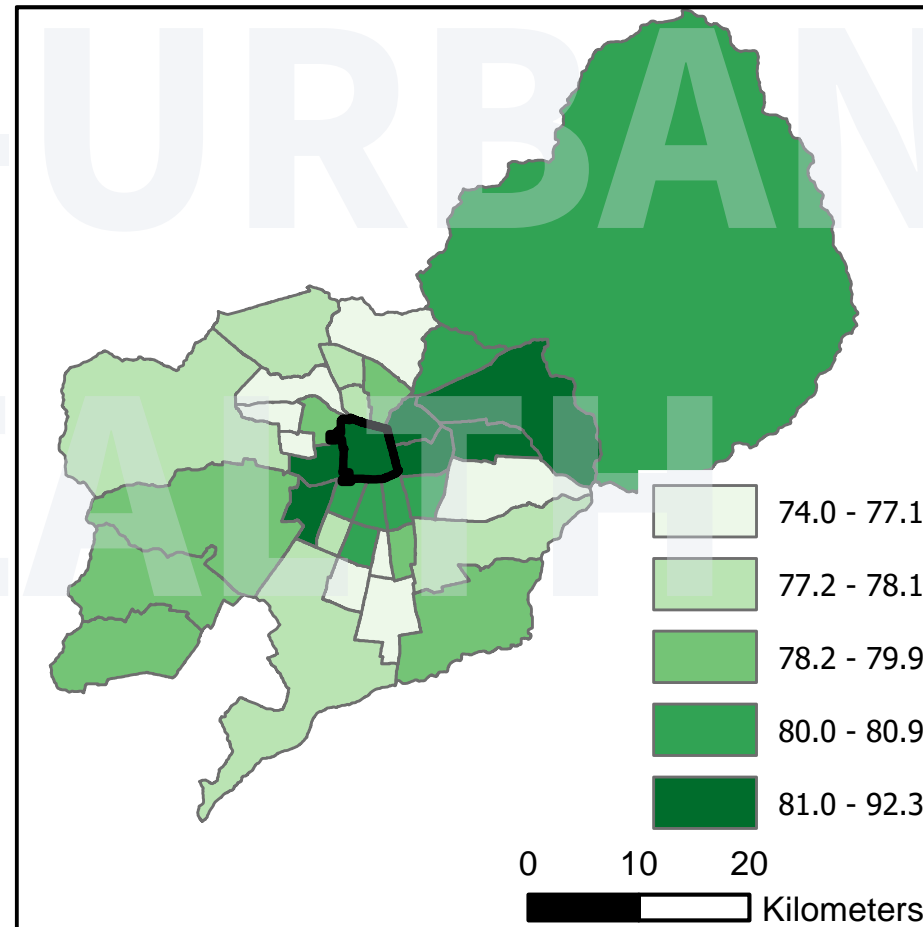
## Trouble in Paradise: Chile's Inequality Explodes

The social reforms agenda presented by President Sebastián Piñera to ease the Chileans' discontent is insufficient.



Photo: HispanTV

## Santiago, CL



# Capital y GBA

## Esperanza de vida: en Buenos Aires hay diferencias de hasta 7 años según el lugar donde se vive



Crónica

### “Una mujer pobre vive 18 años menos...”: estudio extranjero revela brutal desigualdad en Santiago

# EL PAÍS

EL PERIÓDICO GLOBAL  
MIÉRCOLES 11 DE DICIEMBRE DE 2019 | BOGOTÁ (Número 11.490) | SUDAMÉRICA

## El cerebro de la guerra contra el narco, detenido en Texas

El secretario de Seguridad de México entre 2006 y 2012 es acusado de apoyar al cartel de Sinaloa

ELENA REINA / México  
Gerardo García Luna, secretario de Seguridad Pública durante el Gobierno de Felipe Calderón (2006-2012) y pieza clave en la guerra contra el narcotráfico,

## México, EE UU y Canadá sellan su pacto comercial

S. POZZI / S. COBONIA  
Nueva York / México  
Estados Unidos, México y Canadá firmaron ayer los últimos detalles del nuevo tratado de libre comercio, acordado en noviembre de 2018. El texto final incluye nuevas condiciones en materia laboral, medioambiental, biotecnológica y de la industria automotriz. La confirmación de que el tratado será ratificado por los Congresos de EE UU y Canadá —México hará una segunda revisión— llega a un mes del inicio de la campaña presidencial de Estados Unidos. PÁGINA 3

## Los demócratas presentan su acusación contra Trump

AMANDA MARRS / Washington  
Los demócratas presentaron ayer formalmente la acusación contra Donald Trump dentro del proceso de impeachment. Trump se enfrenta a dos cargos: abuso de poder y obstrucción al Congreso. “Caza de brujas”: el despido de Trump en Twitter. El republicano es el cuarto presidente de Estados Unidos que se enfrenta al procedimiento. PÁGINA 2

CHILE Un avión desaparece rumbo a la Antártida con 38 pasajeros  
NOBEL Protestas en las calles contra el premio a Peter Handke



## Alberto Fernández alerta de que Argentina no puede pagar la deuda

El nuevo presidente habla con crudeza de la crisis económica y muestra un talante conciliador en su toma de posesión

ENRIQUE GONZÁLEZ / Buenos Aires  
El nuevo presidente de Argentina, el peronista Alberto Fernández, anunció ayer el cargo con un discurso muy crudo sobre la crisis del país. Fernández se refirió a una nación “en virtual default” y con un 40% de la población en situación de pobreza. Y lanzó un mensaje diluano sobre la deuda: “El país tiene la voluntad de pagar, pero no tiene recursos para hacerlo”. Fernández, que ha descartado los presupuestos elaborados por el Gobierno saliente, abordó una reunión con los socios de la coalición gobernante. PÁGINA 4

## Pablo Gentili, de Podemos al nuevo Ejecutivo argentino

Un grupo de científicos mapea la extrema desigualdad en América Latina  
18 años menos de vida por nacer pobre  
JAVIER SALAS / Madrid  
Una mujer que reside en un barrio deprimido de Santiago de Chile vivirá 18 años menos que una vecina de una zona adinerada de la misma ciudad. En Ciudad de México, esa brecha es de 9 años. La desigualdad social en las grandes urbes latinoamericanas implica enormes diferencias de la esperanza de vida según un estudio que publica The Lancet Planetary Health. El análisis pone cifras por primera vez a la desigualdad social en seis grandes ciudades latinoamericanas que suman 50 millones de habitantes. Los investigadores han observado mayor diferencia dentro de las urbes que entre ellas. PÁGINA 25

Sigue la sección de Ciencia  
EL PAÍS



# CONCLUSIONS

- Mortality varies widely across Latin American cities in the SALURBAL study
- Life expectancy is highly variable, ranging from values like lower-middle income countries to high income countries.
- Causes of death vary widely across cities, especially violent and unintentional injuries
- Life expectancy is highly unequal within six large Latin American cities





# Q&A

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