

Exploration of Systemic Determinants of In-Hospital Mortality due to Acute Myocardial Infarction in Jalisco, Mexico

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Research Question: What are the systemic factors influencing in-hospital mortality due to acute myocardial infarction (AMI)? This exploratory analysis investigates how social and institutional factors impact AMI mortality.

BACKGROUND

AMI remains a major global health challenge, due to its prevalence, resource requirements and treatment window. Mexico has a remarkably high AMI mortality rate relative to other countries.^[1]

Mexico's health system is currently in a period of rapid and turbulent change as a new administration pushes for universal healthcare.^[2] A history of segmentation in the country's healthcare institutions shapes a landscape of disparity in terms of treatments and outcomes.^[3]

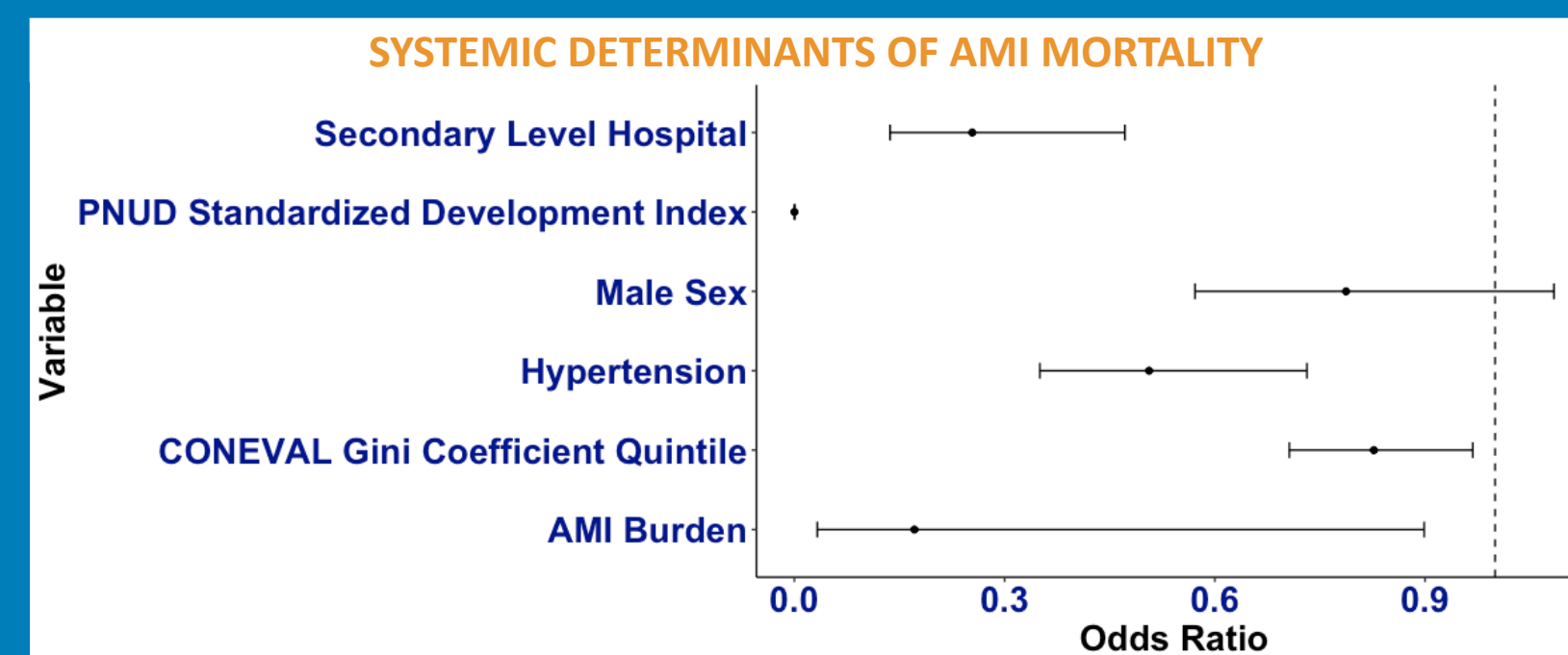
Structural, or systemic determinants are those factors that reinforce existing stratification, like government patterns and social policies.^[4] These factors are upstream of the patient-provider relationship, but they can impact disease outcomes just as physiological or social determinants.

DESCRIPTION OF ORGANIZATION

The Ministry of Health of Jalisco (SSJ) is a branch of the Ministry of Health of Mexico (SSA) and coordinates the management of public and private hospitals, education of medical professionals, public health campaigns and social assistance programs.

TABLES

	2018	2019	2020	2021	Totals
All hospital patients	3750	3654	3852	2662	13918
Adult hospital patients (adult percent of all admissions)	3722	3629	3801	2654	13806
Adult deaths (adult in-hospital mortality)	525	600	673	1362	3160
AMI admissions (percent of all adult admissions)	311	307	124	28	770
AMI deaths (percent of all adult deaths)	88	126	60	20	294
AMI mortality	28%	41%	48%	71%	38%
COVID deaths (percent of all adult deaths)	0	0	259	430	689
	0%	0%	38%	32%	22%



METHODS

This retrospective cohort analysis uses anonymized administrative data from the Mexican National System for Basic Health Information, linked to data from the Epidemiological and Statistical Subsystem of Deaths, collected from all public hospital discharges in Jalisco between January 1st, 2018 and December 31st, 2021. Data for co-variants was publicly available as well and downloaded from CONAPO^[5], CONEVAL^[6], PNUD^[7] and the INEGI ITER^[8].

Data is cleaned and analyzed in RStudio via stepwise logistic regression.

The overall AMI mortality rate from 2018-2021 was 38%. Protective factors for AMI mortality included development index with OR 1.4×10^{-14} , receiving treatment at a secondary-level hospital with OR 0.253, and receiving treatment at a hospital with a higher AMI burden with OR 0.171. ($P < 0.05$)

DISCUSSION

This preliminary inquiry prompts further investigation into how systemic determinants can drive disparate outcomes in healthcare. Improved data collection in the health sector would facilitate new, targeted health policy that could directly benefit marginalized populations.

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