

Impact of Public Health Initiatives on Acute Coronary Syndrome Fatality Rates in Portugal

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Abstract

Introduction and objective: Every year cardiovascular disease (CVD) causes 3.9 million deaths in Europe. Portugal has implemented a set of public health policies to tackle CVD mortality: a smoking ban in 2008, a salt reduction regulation in 2010 and the coronary fast-track system (FTS) for acute coronary syndrome (ACS) in 2007. Our goal in this study was to analyze the impact of these three public health policies in reducing case-fatality rates from ACS between 2000 and 2016.

Methods: The impact of these policies on monthly ACS case-fatalities was assessed by creating individual models for each of the initiatives and implementing multiple linear regression analysis, using standard methods for interrupted time series. We also implemented segmented regression analysis to test which year showed a significant difference in the case-fatality slopes.

Results: Separate modeling showed that the smoking ban ($\beta=-0.861$, $p=0.050$) and the FTS ($\beta=-1.27$, $p=0.003$) had an immediate impact after implementation, but did not have a significant impact on ACS trends. The salt reduction regulation did not have a significant impact. For the segmented model, we found significant differences between case-fatality trends before and after 2009, with rates before 2009 showing a steeper decrease.

Conclusions: The smoking ban and the FTS led to an immediate decrease in case-fatality rates; however, after 2009 no major decrease in case-fatality trends was found. Coronary heart disease constitutes an immense public health problem and it remains essential for decision-makers, public health authorities and the cardiology community to keep working to reduce ACS mortality rates.