Disentangle the Relationship Between Costs and Health Outcomes: the Case of Acute Myocardial Infarction in French Hospitals

Kevin Walter[1,2,*], Yann Videau[1], Nicolas Sirven[2]

[1]ERUDITE, Université Paris-Est-Créteil (UPEC), Créteil, France
[2]École des Hautes Études en Santé Publique (EHESP), Paris/Rennes (France) & Arènes (UMR CNRS 6051)
[*]Corresponding author : Université Paris-Est Créteil (UPEC), 61 Av. du Général de Gaulle, 94010 Créteil ,
E-mail: kevin.walter@u-pec.fr

November 17, 2025

Abstract

In this study, we aim to examine the relationship between hospital production costs and health outcomes. We use French patient-level data for acute myocardial infarction (AMI) stays. A total of 56,691 patients admitted for an emergency AMI between 2015 and 2021 were included. Hospital costs are obtained from the national cost study and divided into (1) direct/indirect, and (2) total costs. Quality indicators are readmission and mortality assessed at 7, 30, and 365 days after discharge. We use two-stage residual inclusion to address costs being endogenous to health outcomes within a multilevel framework, and Cox proportional hazard models in the second stage. We find that total costs are linked to lower hazards of death and readmission and that this association weakens over time. The effect also differs between mortality and readmission. At 7-day, a €1,000 increase in total costs is associated with a 34.2% reduction in the mortality hazard and a 45.8% reduction in the readmission hazard. At 30 days, the same increase is associated with a 7.2% lower readmission hazard and a 1.2% higher mortality hazard. At 365 days, a €1,000 increase in total costs is associated with a 5.2% lower readmission hazard and a 3.1% higher mortality hazard. The decomposition of total costs indicates that the indirect costs component drive the loss of the protective effect for mortality.

Keywords: *cost, quality, acute myocardial infarction, hospital.*
JEL Classification: *C23, D24, I11.*