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**Title:** Postoperative pulmonary complications are associated to higher ICU cost

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**Body:** Background: Surgical procedures in abdominal area promote changes in pulmonary function leading to postoperative pulmonary complications (PPCs). Patients underwent invasive mechanical ventilation (IMV) may have higher incidence of PPCs which has been associated to higher hospitalization and costs.

Objective: To estimate and compare intensive care unit (ICU) costs of patients submitted to abdominal surgery which presented PPCs (considered as ventilator associated pneumonia or nosocomial pneumonia) or not. Method: A transversal, cohort study was conducted in a public tertiary-teaching hospital, included 107 patients submitted to abdominal surgery, aged  $\geq 18$  years old, admitted to ICU due postoperative routine, whose underwent  $\geq 24$  hours of IMV. ICU costs were determined by Omega Score (OS). It comprises 47 diagnostic and therapeutic items pointed from 1 to 10, divided into three categories. Total OS is obtained by adding all points on the last day of the ICU. Costs in Euros (€) was calculated based on Sznajder and cols (1998) equation. All data were collected from patients records.

Variables	Without PPC		With PPC		p
	median	IQR	median	IQR	
Age	60	49-73	51	33-63	<0.001
APACHEII	14	11-19	12	9-17	0.4
Length of ICU stay	12	6-19	34	27-57	<0.001
Length of hospital stay	35	22-52	65	42-86	<0.001
Length of IMV	4	3-7	16	10-21	<0.001
Total OS	210	124-353	788	542-1368	<0.001
Costs€	45644	27493-75967	167995	115922-290770	<0.001

Results: The most often PPC was nosocomial pneumonia (57%). PPCs were presented by younger patients

( $p < 0.001$ ). Patients with PPCs had higher OS ( $p < 0.001$ ) and higher median direct costs (€167,995 vs €45,644;  $p < 0.001$ ). Conclusion: Patients submitted to abdominal surgery which developed PPC, presented higher cost in the ICU.