

IX. APPENDIX

Appendix 1: Results of statistical tests after matching observations

<i>Analysis</i>	<i>Outcome</i>	<i>Characteristic</i>	<i>Statistical Test</i>	<i>P-value</i>
<i>Wound Infections - Hip and Knee Surgeries</i>	Length of Stay	Age	Wilcoxon signed-rank test	0.3700
		Week of Admission	Wilcoxon signed-rank test	0.3173
		Type of Admission	McNemar' test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.9338
		DSP	Marginal homogeneity test	1.0000
	Mortality Rate	Sex	McNemar' test	1.0000
		Week of Admission	Wilcoxon signed-rank test	1.0000
		Type of Admission	McNemar' test	1.0000
<i>Wound Infections - Colorectal Surgery</i>	Length of Stay	Age	Wilcoxon signed-rank test	0.0865
		Sex	McNemar' test	1.0000
		Week of Admission	Wilcoxon signed-rank test	0.6189
		Type of Admission	McNemar test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.0808
	Mortality Rate	Age	Wilcoxon signed-rank test	0.7436
		Week of Admission	Wilcoxon signed-rank test	0.6952
		Type of Admission	McNemar' test	1.0000
<i>Bloodstream Infections</i>	Length of Stay	Age	Wilcoxon signed-rank test	0.9857
		Sex	McNemar' test	1.0000
		Type of Admission	McNemar' test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.9972
		MDC	Marginal homogeneity test	0.9955
		DSP	Marginal homogeneity test	1.0000
	Mortality Rate	Age	Wilcoxon signed-rank test	0.3817
		Sex	McNemar' test	1.0000
<i>Urinary Infections</i>	Length of Stay	Type of Admission	McNemar' test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.2203
		MDC	Marginal homogeneity test	0.9789
		DSP	Marginal homogeneity test	1.0000
	Mortality Rate	Age	Wilcoxon signed-rank test	0.1548
		Sex	McNemar' test	1.0000
<i>Pneumonias</i>	Length of Stay	Type of Admission	McNemar' test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.2203
		MDC	Marginal homogeneity test	0.9155
		DSP	Marginal homogeneity test	1.0000
	Mortality Rate	Age	Wilcoxon signed-rank test	0.0766
		Sex	McNemar' test	1.0000
<i>Pneumonias</i>	Length of Stay	Type of Admission	McNemar' test	1.0000
		Nr of Admissions	Wilcoxon signed-rank test	0.2203
		MDC	Marginal homogeneity test	0.9155
		DSP	Marginal homogeneity test	1.0000

Appendix 2: Database Variables

Variables	Description	Details
NUM_EPISODIO	Episode number	
PATNO	Patient number	
SEX	Gender of patient	Men or women
AGE	Age of patient	
DATA_ADMISSAO	Date of admission	
ADM_TIP	Admission type	6 different types
SAIDLAST	Date of discharge	
DSP	Type of discharge	Home, other health center, or death
DDX1;...;DDX50	Primary and secondary diagnosis	
SRG1;...;SRG50	Procedures patient undertook	
MDC	Main diagnostic category	
nr_adm	Nr of admission	
dummy_CS	Whether patient had colorectal surgery or not	
dummy_OS	Whether patient had knee or hip surgery or not	
index	Whether is index Hospitalization or not	For WI analyzes
week	Week number (in the year) of index admission	For WI analyzes
dummy_WI	Whether patient had wound infection or not	
dummy_BSI	Whether patient had bloodstream infection or not	
dummy_UI	Whether patient had urinary infection or not	
dummy_P	Whether patient had pneumonia or not	
adm_type	Simplification of admission type	Scheduled or not scheduled
dummy_died	Whether patient had died or not	
LOS	Length of stay in each admission	
pos_LOS	Length of stay since index Hospitalization	For WI analyzes
N_DIAG	Nr of diagnosis (excluding those related to HAIs)	
pos_nDIAG	Nr of diagnosis (excluding those related to HAIs) since index Hospitalization	For WI analyzes
N_PROC	Nr of procedures performed	
pos_nPROC	Nr of procedures performed since index Hospitalization	For WI analyzes

Appendix 3: Variables LOS and Mortality Rate details

Analysis	Variable	Obs.	Mean	Std. Dev.	Variance	Skewness	Kurtosis
<i>WI - Hip and Knee Surgeries</i>	Length of Stay	690	11.838	16.969	287.959	9.967	139.527
	Mortality Rate	709	0.027	0.162	0.026	5.860	35.34
<i>WI - Colorectal Surgery</i>	Length of Stay	484	17.672	17.972	322.983	3.557	19.78
	Mortality Rate	556	0.129	0.336	0.113	2.207	5.87
<i>Bloodstream Infections</i>	Length of Stay	23647	7.083	9.337	87.172	6.460	79.69
	Mortality Rate	24431	0.032	0.176	0.031	5.310	29.20
<i>Urinary Infections</i>	Length of Stay	24058	7.415	10.572	111.761	7.442	104.83
	Mortality Rate	24884	0.033	0.179	0.032	5.212	28.16
<i>Pneumonias</i>	Length of Stay	23977	7.459	11.053	122.159	9.328	192.28
	Mortality Rate	24874	0.036	0.186	0.035	4.977	25.77

Appendix 4: Procedures codes and classifications used to select operated patients

Analysis	Procedures codes	Code description
<i>Hip and Knee Surgeries</i>	00.7x	Other hip procedures
	00.8x	Other knee and hip procedures
	81.51	Total hip replacement
	81.52	Partial hip replacement
	81.53	Revision of hip replacement, NOS
	81.54	Total knee replacement
	81.55	Revision of knee replacement, NOS
<i>Colorectal Surgery</i>	17.3x	Laparoscopic partial excision of large intestine
	17.4x	Robotic assisted procedures
	45.6x	Other excision of small intestine
	45.7x	Open and other partial excision of large intestine
	45.8x	Total intra-abdominal colectomy
	45.9x	Intestinal anastomosis
	46.0x	Exteriorization of intestine
	46.1x	Colostomy
	46.2x	Ileostomy
	46.42	Repair of pericostomy repair
	48.42	Laparoscopic pull-through resection of rectum
	48.43	Open pull-through resection of rectum
	48.49	Other pull-through resection of rectum
	48.5x	Abdominoperineal resection of rectum
	48.6x	Other resection of rectum

Appendix 5: Diagnoses codes and classifications used to identify the presence of nosocomial infections

HAI	Diagnoses codes	Code description
<i>Wound Infections</i>	038.xx	Septicemia
	995.91	Sepsis
	995.92	Severe sepsis
	998.51	Infected postoperative seroma
	998.59	Other postoperative infection
<i>Bloodstream Infections</i>	038.xx	Septicemia
	790.7	Bacteremia
	995.91	Sepsis
	995.92	Severe sepsis
	999.32	Bloodstream infection due to central venous catheter
<i>Urinary Infections</i>	038.xx	Septicemia
	590.1x	Acute pyelonephritis
	595.0	Acute cystitis
	597.80	Urethritis, unspecified
	599.0	Urinary tract infection, site not specified
	995.91	Sepsis
	995.92	Severe sepsis
	996.62	Infection and inflammatory reaction due to ind. urinary catheter
	997.5	Urinary complications, not elsewhere classified
<i>Pneumonias</i>	480.x	Viral pneumonia
	481	Pneumococcal pneumonia
	482.xx	Other bacterial pneumonia
	483.x	Pneumonia due to other specified organism
	485	Bronchopneumonia, organism unspecified
	486	Pneumonia , organism unspecified
	487.x	Influenza
	491.21	Obstructive chronic bronchitis with (acute) exacerbation
	493.9x	Asthma unspecified
	997.31	Ventilator associated pneumonia
	997.32	Post procedural aspiration pneumonia
	507.x	Pneumonitis due to solids and liquids
	518.81	Acute respiratory failure
	518.82	Other pulmonary insufficiency, not elsewhere classified
	786.09	Other respiratory abnormalities
	038.xx	Septicemia
	995.91	Sepsis
	995.92	Severe sepsis
	320.3	Staphylococcal meningitis
	790.7	Bacteremia