

Supplementary Material

Specialist Healthcare Intervention and Follow-up Trends in Post-Acute COVID-19 hospitalization as compared to Other Respiratory Infections

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Supplementary Table 1. Diagnostic ICD-9-CM codes investigated and their frequencies in the populations entering the study

<i>ICD-9-CM</i>	<i>ARI Diagnosis</i>	<i>N (%)</i>
COVID-19		36,420
480.4	Pneumonia due to SARS-associated coronavirus	34,739 (95.4%)
043	SARS-CoV-2 disease	8,842 (24.3%)
518.9	COVID-19 acute respiratory distress syndrome	5,419 (14.9%)
V12.04	personal history of COVID-19	933 (2.6%)
519.7	COVID-19 other respiratory infections	515 (1.4%)
Other ARIs		22,337
486	pneumonia	10,876 (48.7%)
482	other bacterial pneumonia	8,355 (37.4%)
485	bronchopneumonia	4,276 (19.1%)
507	pneumonitis due to solids and liquids	2,409 (10.8%)
466	acute bronchitis and bronchiolitis	1,881 (8.4%)
481	pneumococcal pneumonia	1,075 (4.8%)
484	pneumonia in infectious diseases classified elsewhere	419 (1.9%)
510	empyema	402 (1.8%)
483	pneumonia due to other specified organism	321 (1.4%)
551.1	pleurisy with effusion, with mention of a bacterial cause, excluding tuberculosis	234 (1.0%)
480.9	Viral pneumonia, unspecified	179 (0.8%)
490	bronchitis	82 (0.4%)
480.8	Pneumonia due to other virus not elsewhere classified	62 (0.3%)
480.1	Pneumonia due to respiratory syncytial virus	52 (0.2%)
487	influenza	34 (0.2%)
480.0	Pneumonia due to adenovirus	8 (0.04%)
480.2	Pneumonia due to parainfluenza virus	8 (0.04%)
052.1	varicella pneumonitis	4 (0.02%)
480.3	Pneumonia due to parainfluenza virus	2 (0.01%)
003.22	salmonella pneumonia	-
073.0	ornithosis with pneumonia	-

ARI: acute respiratory infections

Supplementary Table 2. Diagnostic ICD-9-CM codes and ATC codes used to determinate the comorbidity

<i>Diagnosis and procedures</i>	<i>ICD-9 Code or ATC Code</i>
Cerebrovascular disease	430, 431, 432.x, 433.xx, 434.xx, 435.x, 436
Heart diseases	402.01, 402.11, 402.91, 410.xx, 411.1, 411.8, 411.81, 411.89, 413.0, 413.1, 413.9, 414.xx, 428.21, 428.31, 428.41, 428.23, 428.33, 428.43, 036.xx, 427.31, 427.32
Venous thromboembolism	325, 415.1, 415.11, 415.19, 451.1, 451.11, 451.19, 451.2, 451.8, 451.81, 451.83. 451.84, 451.89, 451.9, 453.2, 453.3, 453.40, 453.41, 453.42, 453.8, 453.9
Renal failure	585.x, V420, V451, V560, V561, V562, V563.1, V563.2, V568, 038.95, 039.27, 039.42, 039.43, 039.95, 054.98, 055.61, 055.69, 996.81
Lung disease	491.x, 492.x, 494.x, 496.x, 518.81, 518.83, 518.84
Liver disease	570.x, 571.x, 572.x, 573.x, 070.x

Diabetes

| Detected using at least 6 prescriptions of A10* in the 2020

We used the previous 5 years for the check of comorbidity in the diagnosis of hospital discharge.

Supplementary Table 3. Characteristics at entry of patients alive after 12 month

		Hospitalized for COVID-19 N=31,679	Hospitalized for other acute respiratory infections N=14,210	Hospitalized for both N=775	p-value
<i>Characteristics of patients</i>					
Sex	Male	18,495 (58.4%)	8,016 (56.4%)	499 (64.4%)	<0.0001
	Famale	13,184 (41.6%)	6,194 (43.6%)	276 (35.6%)	
Age 2021	Mean(SD)	67.2 (12.8)	74.2 (13.0)	69.2 (12.8)	<0.0001
	Median (IQR)	68 (57; 77)	77 (66; 84)	70 (60; 79)	<0.0001
DDCI 2020	Mean(SD)	2.9 (3.1)	4.5 (3.6)	3.3 (3.2)	<0.0001
	Median (IQR)	2 (0; 5)	4 (1; 7)	3 (0; 6)	<0.0001
Hospitalization duration	Mean(SD)	16.0 (14.1)	14.0 (12.0)	29.2 (23.2)	<0.0001
	Median (IQR)	12 (8; 20)	11 (7; 17)	23 (11; 40)	<0.0001
Cerebrovascular disease		808 (2.6%)	802 (5.6%)	30 (3.9%)	<0.0001
Diabetes		2,889 (9.1%)	1,615 (11.4%)	81 (10.5%)	<0.0001
Heart diseases		2,647 (8.4%)	2,390 (16.8%)	86 (11.1%)	<0.0001
Liver disease		275 (0.9%)	266 (1.9%)	10 (1.3%)	<0.0001
Lung disease		1,222 (3.9%)	1,839 (12.9%)	53 (6.8%)	<0.0001
Renal failure		634 (2.0%)	729 (5.1%)	31 (4.0%)	<0.0001
Venous thromboembolism		311 (1.0%)	308 (2.2%)	8 (1.0%)	<0.0001
Cerebrovascular disease		808 (2.6%)	802 (5.6%)	30 (3.9%)	<0.0001

p-value: Chi square for categorical variables and ANOVA or Kruskal-Wallis Test for continuous ones

DDCI=Drug Derived Complexity Index

Supplementary Table 4. The subsequent use of health services by hospitalization type for the patients alive after 12 month

		Hospitalized for COVID-19 N=31,679	Hospitalized for other acute respiratory infections	Hospitalized for both N=775	p-value
<i>Use of health services</i>					

	N=14,210			
Specialist visits within 12 months after hospital discharge	25,558 (80.7%)	11,888 (83.7%)	665 (85.8%)	<0.0001
- Days to 1 st specialist visit, median (IQR)	64 (32; 126)	50 (21; 112)	66 (33; 114)	<0.0001
- Number of specialist visit, mean (SD)	4.8 (4.6)	6.1 (6.1)	5.5 (5.3)	<0.0001
Hospitalization within 12 months after hospital discharge				
- COVID-19	2,085 (6.6%)	650 (4.6%)	61 (7.9%)	<0.0001
Days to 1 st hospitalization, median(IQR)	16 (7; 36)	162 (50; 278)	13 (6; 31)	<0.0001
- Acute respiratory infections	577 (1.8%)	1,289 (9.1%)	42 (5.4%)	<0.0001
Days to 1 st hospitalization, median(IQR)	100 (28; 228)	106 (30; 223)	120 (20; 212)	0.5370
- Other hospitalizations	6,001 (18.9%)	4,460 (31.4%)	198 (25.5%)	<0.0001
Days to 1 st hospitalization, median(IQR)	126 (49; 229)	102 (38; 210)	109 (35; 208)	<0.0001
Imaging, functional and biochemical tests dispensation within 12 months after hospital discharge				
Spirometry	6,545 (20.7%)	1,621 (11.4%)	229 (29.5%)	<0.0001
Chest CT scan	9,763 (30.8%)	3,584 (25.2%)	304 (39.2%)	<0.0001
Electrocardiogram	10,434 (32.9%)	5,373 (37.8%)	283 (36.5%)	<0.0001
Echocardiography	5,690 (18.0%)	2,617 (18.4%)	144 (18.6%)	0.4752
C-reactive protein	15,026 (47.4%)	7,683 (54.1%)	437 (56.4%)	<0.0001
Whole blood count	24,363 (76.9%)	11,755 (82.7%)	636 (82.1%)	<0.0001
Creatinine	23,927 (75.5%)	11,633 (81.9%)	627 (80.9%)	<0.0001
Glycemia	20,946 (66.1%)	9,913 (69.8%)	535 (69.0%)	<0.0001
Prothrombin time	9,306 (29.4%)	5,381 (37.9%)	283 (36.5%)	<0.0001
D-Dimer	6,577 (21.1%)	1,419 (10.0%)	175 (22.6%)	<0.0001
AST	20,946 (66.1%)	9,837 (69.2%)	540 (69.7%)	<0.0001
ALT	21,708 (68.5%)	10,199 (71.8%)	560 (72.3%)	<0.0001
LDH	7,771 (24.5%)	3,512 (24.7%)	234 (30.2%)	0.0015
Ferritin	7,214 (22.8%)	4,168 (29.3%)	210 (27.1%)	<0.0001
Potassium	18,241 (57.6%)	9,925 (69.8%)	492 (63.5%)	<0.0001
Sodium	17,072 (53.9%)	9,533 (67.1%)	471 (60.8%)	<0.0001
Drugs dispensed within 12 months after hospital discharge (at least one dispensed drug, first and second level of ATC Classification)				
Alimentary Tract And Metabolism	24,315 (76.8%)	12,024 (84.6%)	612 (79.0%)	<0.0001
Blood And Blood Forming Organs	21,099 (66.6%)	10,452 (73.6%)	541 (69.8%)	<0.0001
Cardiovascular System	22,212 (70.1%)	11,713 (82.4%)	606 (78.2%)	<0.0001

Dermatologicals	579 (1.8%)	273 (1.9%)	19 (2.5%)	<0.0001
Genito Urinary System And Sex Hormones	4,368 (13.8%)	2,496 (17.6%)	137 (17.7%)	<0.0001
Systemic Hormonal Preparations, Excl. Sex Hormones And Insulins	13,761 (43.4%)	5,084 (35.8%)	279 (36.0%)	<0.0001
Antiinfectives For Systemic Use	13,416 (42.3%)	9,513 (66.9%)	408 (52.6%)	<0.0001
Antineoplastic And Immunomodulating Agents	1,911 (6.0%)	1,508 (10.6%)	55 (7.1%)	<0.0001
Musculo-Skeletal System	8,605 (27.2%)	5,025 (35.4%)	212 (27.4%)	<0.0001
Nervous System	10,533 (33.2%)	7,259 (51.1%)	340 (43.9%)	<0.0001
Antiparasitic Products, Insecticides And Repellents	424 (1.3%)	302 (2.1%)	13 (1.7%)	<0.0001
Respiratory System	6,961 (22.0%)	4,985 (35.1%)	238 (30.7%)	<0.0001
Sensory Organs	1,307 (4.1%)	795 (5.6%)	36 (4.6%)	<0.0001
Various	2,638 (8.3%)	2,321 (16.3%)	103 (13.3%)	<0.0001

p-value: Chi square for categorical variables and ANOVA or Kruskal-Wallis Test for continuous ones

Supplementary Table 5. Subjects alive at month 12 with incident chronic drug use (first and second level of ATC classification) within 12 months after hospital discharge.

	Hospitalization for COVID-19	Hospitalization for other acute respiratory infections	Hospitalization for both	p-value ¹	OR (95% C.I.) ²	Age, sex and DDCI adjusted p- value
Alimentary Tract And Metabolism	1,972/13,752 (14.3%)	968/4,047 (23.9%)	80/343 (23.3%)	<0.0001	0.66 (0.61;0.73)	<0.0001
Drugs For Acid Related Disorders	1,300/18,575 (7.0%)	820/6,151 (13.3%)	50/466 (10.7%)	<0.0001	0.65 (0.59;0.71)	<0.0001
Drugs For Functional Gastrointestinal Disorders	2/31,558 (0.0%)	6/14,070 (0.0%)	-	0.0068	0.12 (0.02;0.62)	0.0113
Antiemetics And Antinauseants	4/31,566 (0.0%)	5/14,040 (0.0%)	-	0.1074	0.28 (0.07;1.07)	0.0622
Bile And Liver Therapy	130/31,260 (0.4%)	138/13,856 (1.0%)	7/764 (0.9%)	<0.0001	0.46 (0.36;0.60)	<0.0001
Drugs For Constipation	27/31,559 (0.1%)	34/14,079 (0.2%)	1/772 (0.1%)	0.0001	0.35 (0.21;0.60)	0.0001
Antidiarrheals, Intestinal	59/29,528 (0.2%)	66/12,849 (0.5%)	2/726 (0.3%)	<0.0001	0.42 (0.29;0.60)	<0.0001
Antiinflammatory/Antiinfective Agents						
Digestives, Incl. Enzymes	18/31,592 (0.1%)	12/14,133 (0.1%)		0.4298	0.68 (0.32;1.44)	0.3120
Drugs Used In Diabetes	766/26,576 (2.9%)	226/11,259 (2.0%)	14/636 (2.2%)	<0.0001	1.42 (1.22;1.66)	<0.0001
Vitamins	243/25,953 (0.9%)	127/10,409 (1.2%)	13/633 (2.1%)	0.0021	0.98 (0.78;1.22)	0.8363
Mineral Supplements	189/30,251 (0.6%)	196/12,937 (1.5%)	7/733 (1.0%)	<0.0001	0.56 (0.45;0.69)	<0.0001
Blood And Blood Forming Organs	1,683/16,494 (10.2%)	1,116/6,017 (18.5%)	65/406 (16.0%)	<0.0001	0.61 (0.56;0.66)	<0.0001
<i>Antithrombotic Agents</i>	1,565/17,552 (8.9%)	1,028/6,943 (14.8%)	56/440 (12.7%)	<0.0001	0.68 (0.63;0.75)	<0.0001
Vitamin K Antagonists	55/30,758 (0.2%)	41/13,277 (0.3%)	4/748 (0.5%)	0.0057	0.60 (0.39;0.91)	0.0174
Heparin Group	394/23,711 (1.7%)	319/12,287 (2.6%)	18/616 (2.9%)	<0.0001	0.75 (0.64;0.88)	0.0003
Platelet Aggregation Inhibitors Excl. Heparin	509/25,989 (2.0%)	358/10,066 (3.6%)	15/615 (2.4%)	<0.0001	0.63 (0.55;0.73)	<0.0001
Direct Factor Xa Inhibitors	1,174/30,183 (3.9%)	825/12,637 (6.5%)	28/734 (3.8%)	<0.0001	0.77 (0.70;0.85)	<0.0001
Cardiovascular System	1,453/12,294 (11.8%)	761/3,517 (21.6%)	59/267 (22.1%)	<0.0001	0.58 (0.53;0.64)	<0.0001
Cardiac Therapy	368/29,333 (1.3%)	306/11,976 (2.6%)	12/710 (1.7%)	<0.0001	0.66 (0.57;0.77)	<0.0001
Antihypertensives	138/30,292 (0.5%)	122/13,171 (0.9%)	8/738 (1.1%)	<0.0001	0.53 (0.41;0.68)	<0.0001
Diuretics	723/27,325 (2.6%)	850/9,672 (8.8%)	23/633 (3.6%)	<0.0001	0.39 (0.36;0.44)	<0.0001
Beta Blocking Agents	931/23,107 (4.0%)	608/8,620 (7.1%)	36/552 (6.5%)	<0.0001	0.68 (0.61;0.76)	<0.0001
Calcium Channel Blockers	486/26,451 (1.8%)	340/10,591 (3.2%)	16/612 (2.6%)	<0.0001	0.71 (0.62;0.82)	<0.0001
Agents Acting On The Renin-Angiotensin System	551/17,752 (3.1%)	308/7,079 (4.4%)	18/423 (4.3%)	<0.0001	0.79 (0.68;0.91)	0.0016
Lipid Modifying Agents	398/22,645 (1.8%)	237/8,999 (2.6%)	8/542 (1.5%)	<0.0001	0.70 (0.59;0.83)	<0.0001
Dermatologicals	4/31,162 (0.0%)	4/13,913 (0.0%)		0.4651	0.52 (0.12;2.18)	0.3690
Genito Urinary System And Sex Hormones	416/28,110 (1.5%)	231/12,038 (1.9%)	15/671 (2.2%)	0.0028	1.03 (0.87;1.21)	0.7636
Systemic Hormonal Preparations, Excl. Sex Hormones And Insulins	251/20,915 (1.2%)	277/10,406 (2.7%)	9/545 (1.7%)	<0.0001	0.47 (0.39;0.56)	<0.0001
Corticosteroids For Systemic Use	164/22,310 (0.7%)	193/11,357 (1.7%)	5/571 (0.9%)	<0.0001	0.43 (0.35;0.54)	0.8939

Thyroid Therapy	16/29,701 (0.1%)	15/13,009 (0.1%)	1/737 (0.1%)	0.0808	0.56 (0.27;1.17)	<0.0001
Calcium Homeostasis	164/22,310 (0.7%)	193/11,357 (1.7%)	5/571 (0.9%)	<0.0001	1.01 (0.39;2.62)	0.1221
Antiinfectives For Systemic Use	178/14,025 (1.3%)	289/6,767 (4.3%)	12/384 (3.1%)	<0.0001	0.33 (0.27;0.40)	<0.0001
Antibacterials For Systemic Use	161/14,387 (1.1%)	275/7,033 (3.9%)	12/394 (3.0%)	<0.0001	0.33 (0.27;0.40)	<0.0001
Antimycotics For Systemic Use	17/31,238 (0.1%)	17/13,888 (0.1%)	-	0.0151	0.35 (0.17;0.70)	0.0033
Antimycobacterials	12/31,636 (0.0%)	8/14,169 (0.1%)	1/775 (0.1%)	0.3719	0.74 (0.29;1.88)	0.5307
Antivirals For Systemic Use	35/31,027 (0.1%)	60/13,606 (0.4%)	4/760 (0.5%)	<0.0001	0.17 (0.11;0.27)	<0.0001
Antineoplastic And Immunomodulating Agents	108/30,000 (0.4%)	91/12,884 (0.7%)	4/724 (0.6%)	<0.0001	0.39 (0.29;0.53)	<0.0001
Musculo-Skeletal System	168/23,182 (0.7%)	146/9,567 (1.5%)	7/571 (1.2%)	<0.0001	0.60 (0.48;0.76)	<0.0001
Nervous System	1,011/23,816 (4.2%)	597/8,088 (7.4%)	55/570 (9.6%)	<0.0001	0.69 (0.62;0.77)	<0.0001
Antipsychotics	354/30,657 (1.2%)	297/12,997 (2.3%)	14/745 (1.9%)	<0.0001	0.76 (0.65;0.89)	0.0008
Psychoanaleptics	499/27,904 (1.8%)	245/11,231 (2.2%)	25/694 (3.6%)	0.0002	1.02 (0.87;1.20)	0.7832
Antiparasitic Products, Insecticides And Repellents	13/31,227 (0.0%)	17/13,989 (0.1%)	-	0.0023	0.33 (0.16;0.71)	0.0046
Respiratory System	312/26,497 (1.2%)	342/10,422 (3.3%)	13/608 (2.1%)	<0.0001	0.42 (0.36;0.50)	<0.0001
Drugs For Obstructive Airway Diseases	292/27,468 (1.1%)	342/10,836 (3.2%)	13/626 (2.1%)	<0.0001	0.40 (0.34;0.47)	<0.0001
Cough And Cold Preparations	4/31,532 (0.0%)	3/14,139 (0.0%)	-	0.4959	0.82 (0.17;3.83)	0.7961
Antihistamines For Systemic Use	24/30,333 (0.1%)	19/13,562 (0.1%)	-	0.0592	0.73 (0.39;1.37)	0.3276
Sensory Organs	23/30,457 (0.1%)	9/13,448 (0.1%)	1/740 (0.1%)	0.7886	1.40 (0.63;3.10)	0.4099
Various	78/29,257 (0.3%)	108/12,995 (0.8%)	2/727 (0.3%)	<0.0001	0.48 (0.35;0.64)	<0.0001

1. Chi-square – 2. Logistic regression Probability COVID vs MR (no both) age, sex and DDCI adjusted

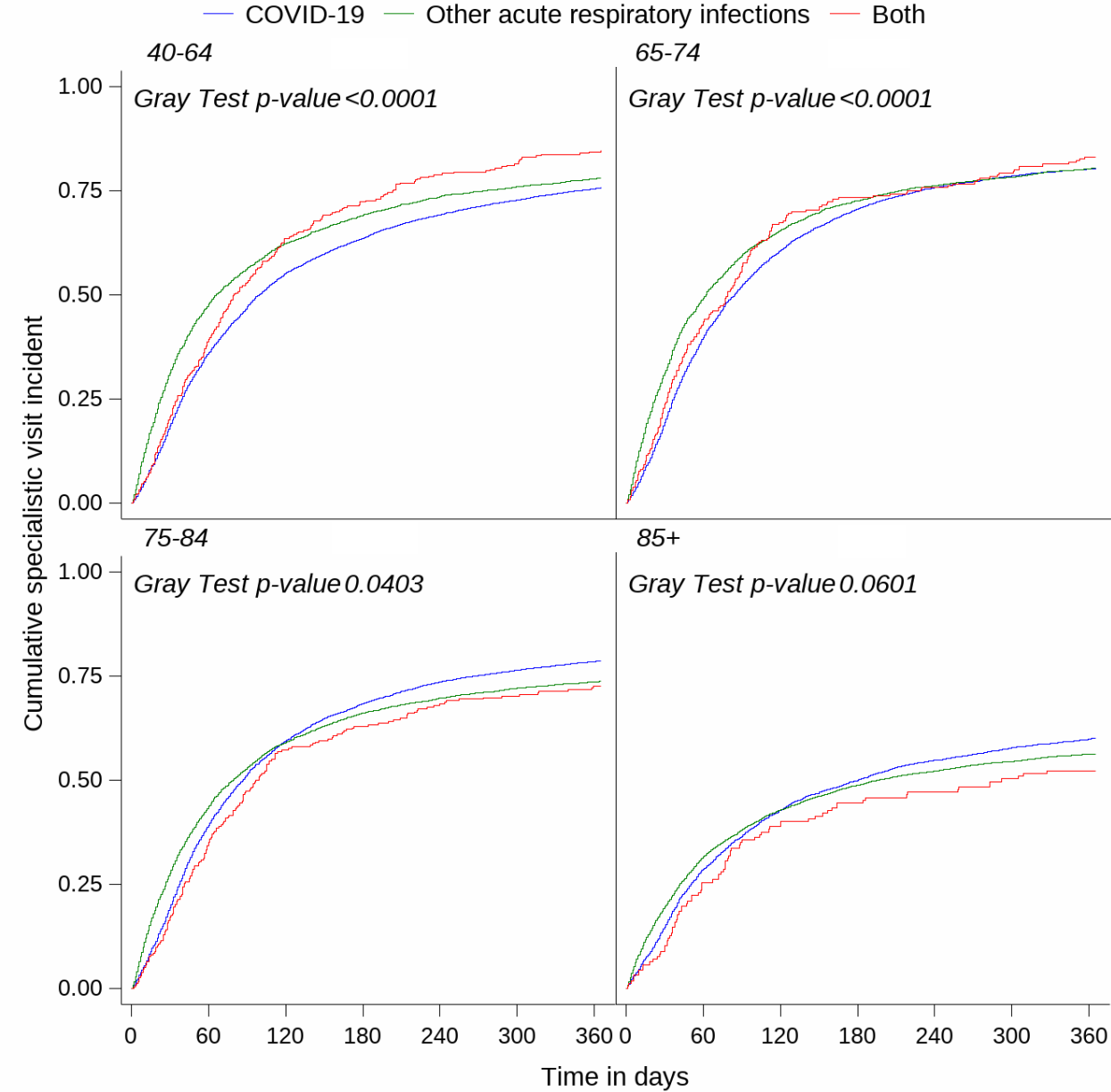
Supplementary Table 6. Medical departments where main specialist visits or other interventions have been performed after hospitalization for COVID-19 or other acute respiratory infections.

	<i>Hospitalized for COVID-19</i>	<i>Hospitalized for other acute respiratory infections</i>	<i>Hospitalized for both</i>
<i>Pneumology</i>	7840 (22.1%)	3240 (15.2%)	257 (26.7%)
<i>Cardiology</i>	7731 (21.8%)	4330 (20.3%)	215 (22.3%)
<i>Internal Medicine</i>	6000 (16.9%)	3432 (16.1%)	204 (21.2%)
<i>Missing Data</i>	4730 (13.3%)	3760 (17.6%)	110 (11.4%)
<i>Ophthalmology</i>	4283 (12.1%)	1824 (8.5%)	98 (10.2%)
<i>Endocrinology, Metabolism and Nutrition</i>	4279 (12.1%)	2170 (10.2%)	122 (12.7%)
<i>Orthopedics and Traumatology</i>	4093 (11.5%)	1896 (8.9%)	97 (10.1%)
<i>Functional Recovery and Rehabilitation</i>	3234 (9.1%)	1692 (7.9%)	114 (11.9%)
<i>Neurology</i>	3214 (9.1%)	1958 (9.2%)	114 (11.9%)

<i>General Surgery</i>	3062 (8.6%)	2053 (9.6%)	85 (8.8%)
<i>Otorhinolaryngology</i>	2777 (7.8%)	1508 (7.1%)	84 (8.7%)
<i>Urology</i>	2673 (7.5%)	1377 (6.4%)	78 (8.1%)
<i>Dermatology</i>	2043 (5.8%)	859 (4.0%)	65 (6.8%)
<i>Infectious and Tropical Diseases</i>	1882 (5.3%)	636 (3.0%)	69 (7.2%)
<i>Oncology</i>	1733 (4.9%)	1506 (7.0%)	38 (4.0%)
<i>Hematology</i>	1552 (4.4%)	1417 (6.6%)	41 (4.3%)
<i>Nephrology</i>	1017 (2.9%)	1021 (4.8%)	41 (4.3%)
<i>Allergology</i>	976 (2.8%)	656 (3.1%)	31 (3.2%)
<i>Gastroenterology</i>	962 (2.7%)	586 (2.7%)	24 (2.5%)
<i>Laboratory Analysis</i>	924 (2.6%)	822 (3.8%)	30 (3.1%)
<i>Vascular Surgery</i>	870 (2.5%)	550 (2.6%)	19 (2%)
<i>Obstetrics and Gynecology</i>	864 (2.4%)	289 (1.4%)	14 (1.5%)
<i>Neurosurgery</i>	587 (1.7%)	388 (1.8%)	18 (1.9%)
<i>Dentistry and Stomatology</i>	581 (1.6%)	300 (1.4%)	13 (1.4%)
<i>Psychiatry</i>	544 (1.5%)	282 (1.3%)	15 (1.6%)
<i>Rheumatology</i>	496 (1.4%)	319 (1.5%)	15 (1.6%)
<i>Radiotherapy</i>	446 (1.3%)	354 (1.7%)	12 (1.2%)
<i>Geriatrics</i>	442 (1.2%)	435 (2.0%)	17 (1.8%)
<i>Anesthesia Rehabilitation</i>	329 (0.9%)	223 (1.0%)	38 (4.0%)
<i>Plastic Surgery</i>	309 (0.9%)	167 (0.8%)	9 (0.9%)
<i>Cardiac Surgery</i>	280 (0.8%)	193 (0.9%)	6 (0.6%)
<i>Radiology</i>	207 (0.6%)	91 (0.4%)	2 (0.2%)
<i>Palliative Care</i>	205 (0.6%)	199 (0.9%)	4 (0.4%)
<i>Hemodialysis</i>	186 (0.5%)	233 (1.1%)	7 (0.7%)
<i>Angiology</i>	170 (0.5%)	78 (0.4%)	6 (0.6%)
<i>Thoracic Surgery</i>	151 (0.4%)	191 (0.9%)	11 (1.1%)
<i>Nephrology (Kidney Transplantation)</i>	147 (0.4%)	155 (0.7%)	8 (0.8%)
<i>Immunology</i>	142 (0.4%)	88 (0.4%)	5 (0.5%)
<i>Sports Medicine</i>	112 (0.3%)	22 (0.1%)	0 (0.0%)
<i>Oncohematology</i>	96 (0.3%)	68 (0.3%)	3 (0.3%)
<i>Nuclear Medicine</i>	95 (0.3%)	49 (0.2%)	2 (0.2%)

<i>Maxillofacial Surgery</i>	94 (0.3%)	57 (0.3%)	3 (0.3%)
<i>Day Hospital</i>	75 (0.2%)	48 (0.2%)	1 (0.1%)
<i>Occupational Medicine</i>	51 (0.1%)	27 (0.1%)	3 (0.3%)
<i>Oncological Radiotherapy</i>	50 (0.1%)	50 (0.2%)	0 (0.0%)

Supplementary Figure 1. Cumulative incidence of specialist visits with competing risk of death, by age classes



Supplementary Figure 2. Cumulative incidence of (non-acute respiratory infection) hospitalizations with competing risk of death

