Characteristics of SARS-CoV-2 patients dying in Italy
Report based on available data on January 10th, 2022

1. *Demographics*

The present report describes the characteristics of 138,099 SARS-CoV-2 patients dying in Italy from the beginning of the surveillance to the 10th of January 2022, as reported by the Integrated Covid-19 Surveillance System coordinated by the National Institute of Health-ISS.

Mean age of patients dying for SARS-CoV-2 infection was 80 years (median=82, range 0-109, IQR (1st quartile=74; 3rd quartile=88)). Women were 60,201 (43.6%). *Figure 1* shows that median age of patients dying for SARS-CoV-2 infection was more than 35 years higher as compared with the national sample diagnosed with SARS-CoV-2 infection (median age 43 years).

Figure 1. *Median age of patients with SARS-CoV-2 infection and SARS-CoV-2 positive deceased patients*

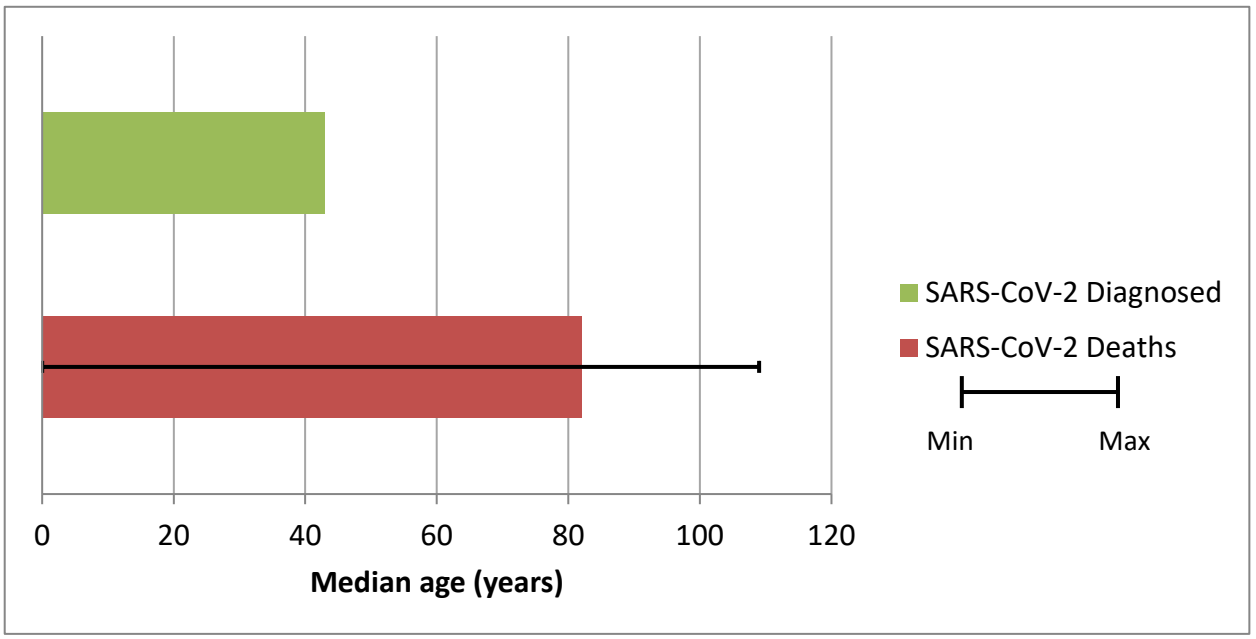
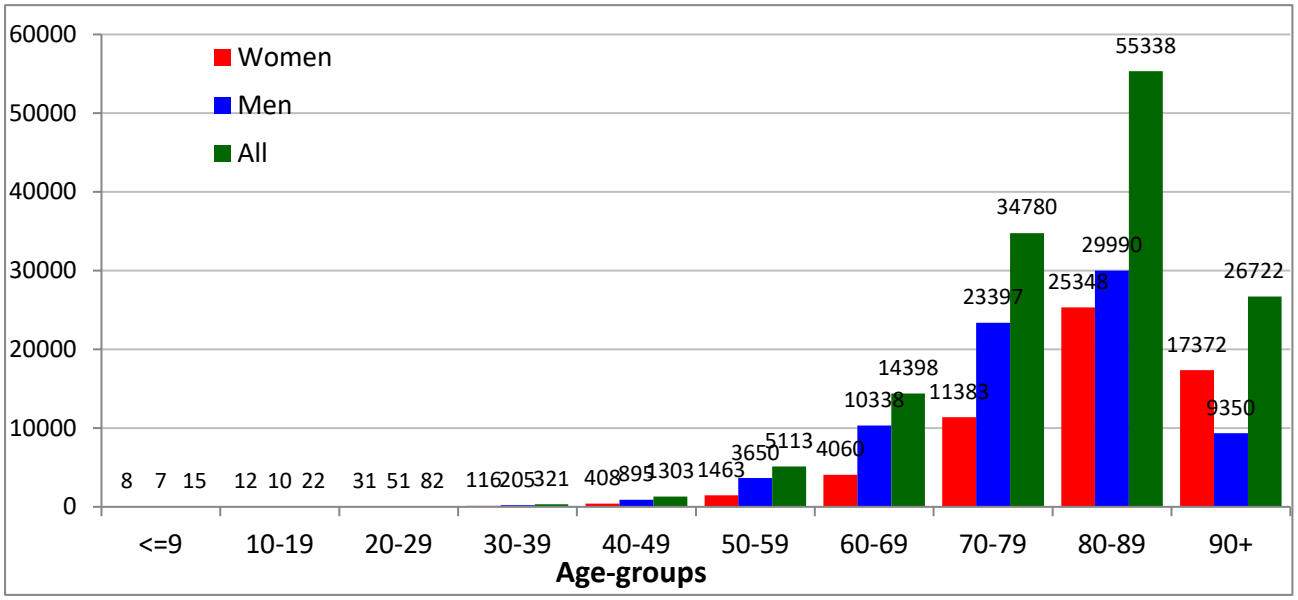


Figure 2 shows the absolute number of deaths by age group. In the age group ≥ 90 years only, the number of female deaths exceed those of males. These data are related to the fact that about 72% of the population over 90 years in Italy are women. Overall, women dying for SARS-CoV-2 infection had an older age than men (median age women, 85 years - median age men, 80 years).

As of January the 10th 2022, 1,743 deaths, out of the 138,099 (1.3%) positive SARS-CoV-2 deceased patients, are under the age of 50. In particular, 440 of these were less than 40 years (273 men and 167 women), age range between 0 and 39 years.

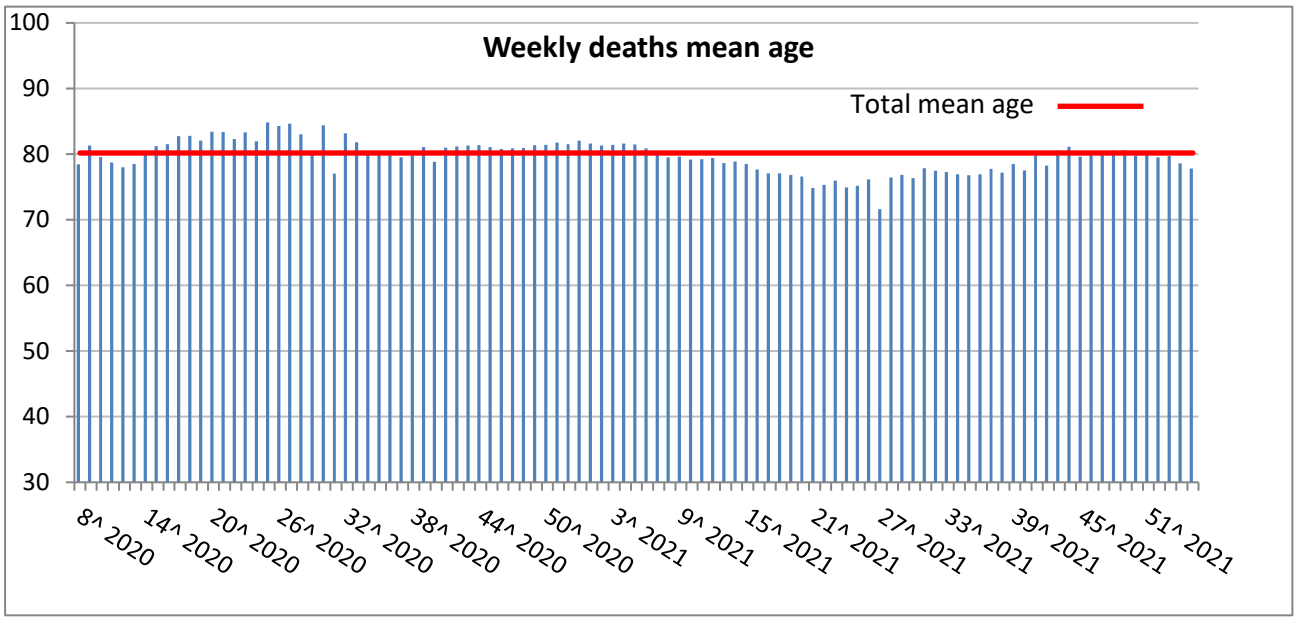
Figure 2. *Absolute number of deaths by age group and sex*



Note: *for 5 deaths age was not possible to be evaluated*

Figure 3 shows the trend in the average age of SARS-CoV-2 positive deceased patients per calendar week, starting from the 3rd week of February 2020 (the 8th week from the beginning of 2020 in *Figure 3*; the date of the first death dates back to the 20th of February 2020). The average age of weekly deceased persons has substantially increased up to 85 years (1st week of July 2020) and then dropped slightly; a further reduction in the average age of deaths was detected starting from February-March 2021 (80 years in the 2nd week of February 2021), reaching 72 years in the 2nd week of July 2021 (the 25th week of the 2021). This reduction in the average age of deaths is likely a consequence of the protective effect of vaccinations in the older population given priority to vaccination. From the 2nd week of July, the mean age of deaths increased slightly, remaining however below 80 years. It is worth noting that the data of the last weeks of observation have to be consolidated and therefore could undergo variations.

Figure 3. *Mean age of SARS-CoV-2 positive deceased patients by week of death*



2. *SARS-COV-2 positive deaths in the year 2021 and hospitalization history*

This section analyses the deceased in the year 2021 divided into 3 different groups: deceased who were hospitalized in an intensive care unit ('Hospitalization in ICU'), deceased who were hospitalized in a hospital ward but not in intensive care ('Hospitalization') and deceased not hospitalized in intensive care or in any other hospital ward ('Other').
Out of the SARS-CoV-2 positive deaths in Italy, 23.8% were hospitalized in an intensive care unit, 58.5% were hospitalized but not in intensive care, and 17.7% did not appear to be hospitalized neither in intensive care nor in any other hospital ward. The proportion of SARS-CoV-2 positive deceased patients admitted to intensive care shows changes over the course of 2021. This proportion increases from 17.8% in January to a maximum of 38.0% in July for then dropping again until December (21.3%) (*Figure 4*).

Figure 4. *Monthly distribution of SARS-CoV-2 positive deceased patients in 2021 in relation to be admitted to ICU ('ICU Hospitalization'), to be hospitalized but not in a ICU ('Hospitalization'), or to be not hospitalized neither in intensive care nor in any other hospital ('Other')*

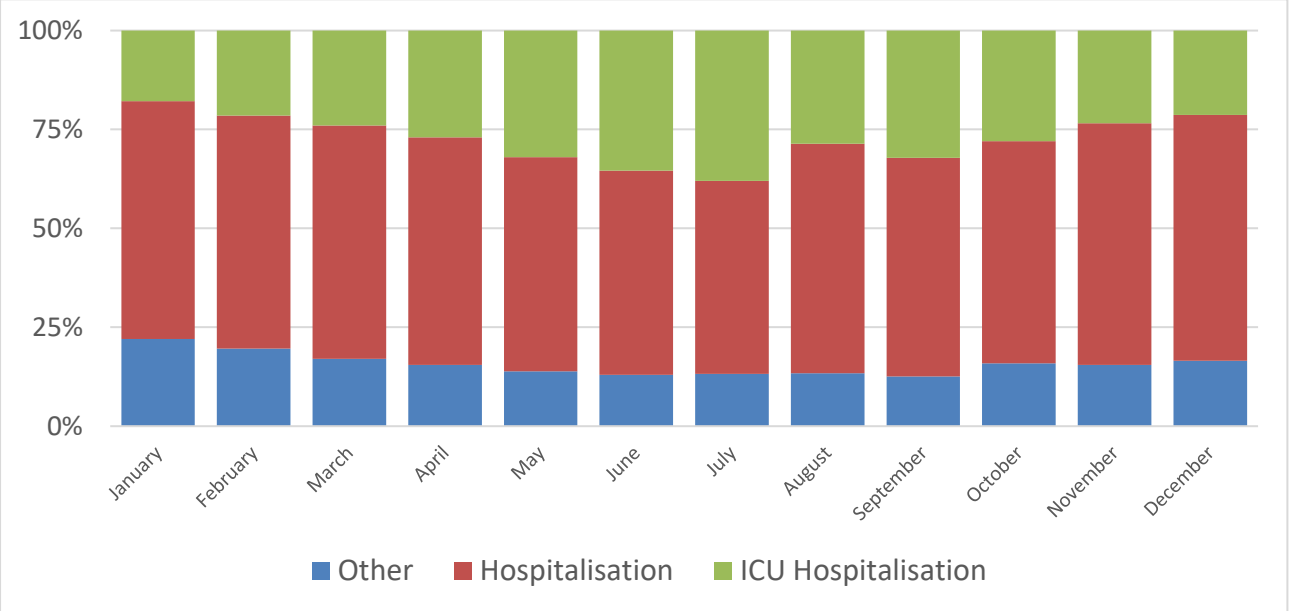
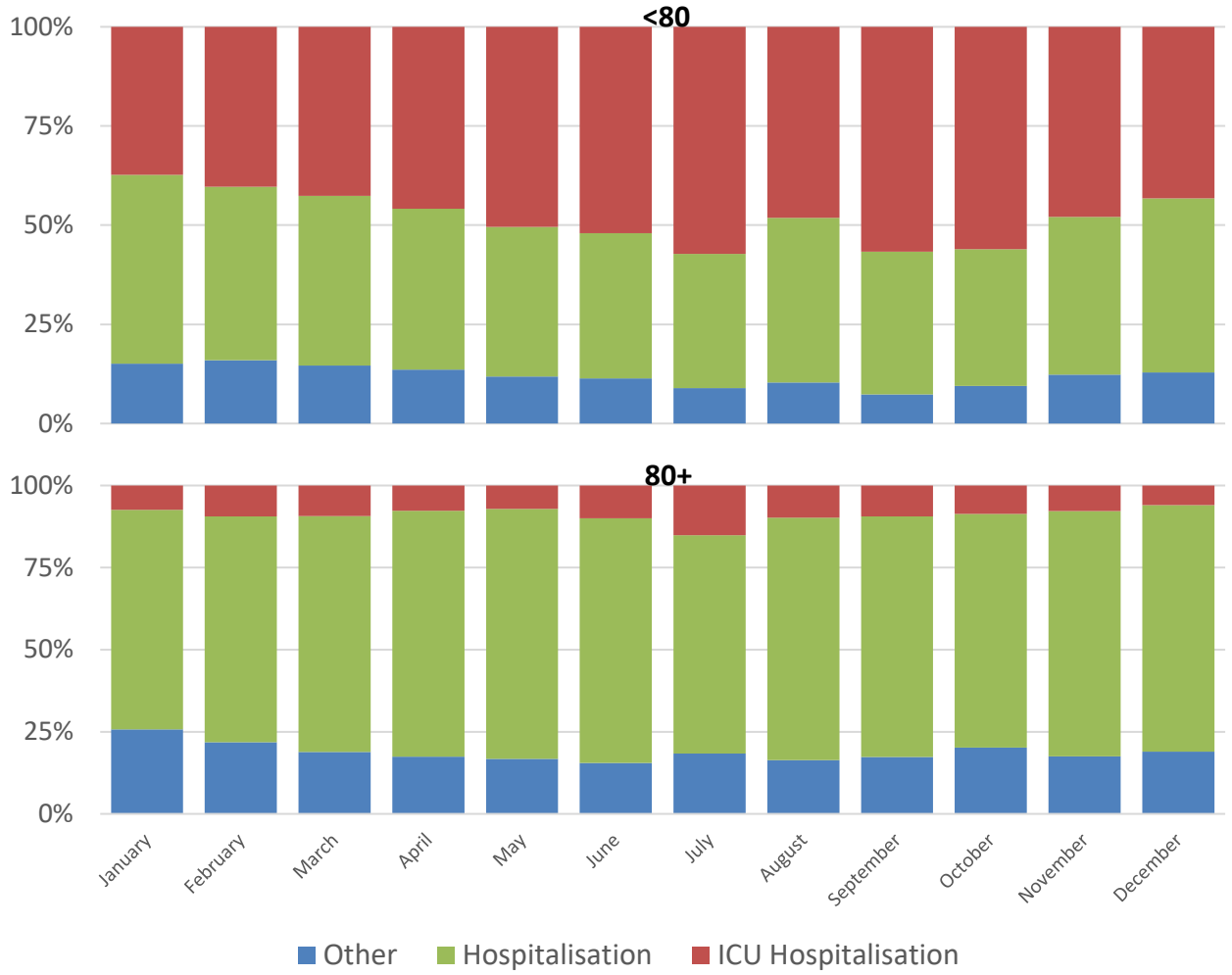


Figure 5 shows the monthly trend of SARS-CoV-2 positive deaths in relation to the three contexts analysed in the population aged <80 and ≥ 80 years. Although the monthly trend described in *Figure 4* is confirmed, the proportion of deaths aged ≥ 80 admitted to intensive care is much lower than that of the population aged <80 years. In the population of deceased aged <80 years, 44.0% were hospitalized in an intensive care unit, 42.3% were hospitalized but not in intensive care, and 13.7% were not hospitalized neither in intensive care nor in any other hospital ward. In contrast, in the population aged ≥ 80 years, 8.2% were hospitalized in an intensive care unit, 71.1% were hospitalized but not in intensive care and 20.7% did not appear to be hospitalized neither in intensive care nor in any other hospital ward.

An in-depth analysis of the characteristics of the deceased who passed through intensive care units or other hospital ward can be found in paragraph 4.

Figure 5. *Monthly distribution of SARS-CoV-2 positive deceased patients in 2021 in relation to be admitted to ICU ('ICU Hospitalization'), to be hospitalized but not in a ICU ('Hospitalization'), or to be not hospitalized neither in intensive care nor in any other hospital ('Other') by age group (<80 years and 80 years or older)*



3. Pre-existing conditions

The data presented in paragraphs from 3 to 6 were obtained from 8,436 deceased patients whose medical records could be analysed. The medical records have been sent to the ISS by the hospitals at different times, compatibly with the priorities of the activities carried out in the hospitals themselves.

Table 1 presents most common comorbidities diagnosed before SARS-CoV-2 infection in a sample of SARS-CoV-2 positive deceased patients. The mean number of diseases was 3.7 (median=3, SD=2.1). Overall, 2.9% of the sample presented no comorbidities, 11.3% a single comorbidity, 17.9% 2, and 67.8% 3 or more comorbidities.

Between patients whose medical records were analysed, the acute respiratory distress syndrome was observed in the majority of patients (93.3% of cases), followed by acute renal failure (25.4%); superinfection was observed in 21.0% and acute cardiac injury in 10.4% of cases.

Table 1. *Most common comorbidities observed in SARS-CoV-2 positive deceased patients*

	All		**Women**		**Men**	
Diseases	***N***	***%***	***N***	***%***	***N***	***%***
Ischemic heart disease	2,379	*28.2*	810	*23.7*	1,569	*31.3*
Atrial Fibrillation	2,114	*25.1*	901	*26.3*	1,213	*24.2*
Heart failure	1,349	*16.0*	623	*17.8*	726	*14.2*
Stroke	950	*11.3*	419	*12.2*	531	*10.6*
Hypertension	5,550	*65.8*	2,327	*68.0*	3,223	*64.3*
Type 2-Diabetes	2,459	*29.1*	934	*27.3*	1,525	*30.4*
Dementia	1,987	*23.6*	1,095	*32.0*	892	*17.8*
COPD (Chronic Obstructive Pulmonary Disease)	1,476	*17.5*	487	*14.2*	989	*19.7*
Active cancer in the past 5 years	1,362	*16.1*	490	*14.3*	872	*17.4*
Chronic liver disease	427	*5.1*	145	*4.2*	282	*5.6*
Dialysis	198	*2.3*	66	*1.9*	132	*2.6*
HIV Infection	19	*0.2*	2	*0.1*	17	*0.3*
Autoimmune diseases	397	*4.7*	221	*6.5*	176	*3.5*
Obesity	981	*11.6*	391	*11.4*	590	*11.8*
Number of comorbidities						
0 comorbidities	246	*2.9*	67	*2.0*	179	*3.6*
1 comorbidity	955	*11.3*	337	*9.8*	618	*12.3*
2 comorbidities	1,512	*17.9*	586	*17.1*	926	*18.5*
3 comorbidities and over	5,723	*67.8*	2,434	*71.1*	3,289	*65.6*
Complications from SARS-CoV-2 infection	N	*%*	N	*%*	N	*%*
Acute respiratory distress syndrome	7,730	*93.3*	3,089	*91.6*	4,641	*94.6*
Acute renal injury	2,106	*25.4*	743	*22.0*	1,363	*27.8*
Acute cardiac injury	859	*10.4*	316	*9.0*	543	*10.7*
Co-infection	1,737	*21.0*	668	*19.8*	1,069	*21.8*

In women (n=3,424) the average number of observed pathologies is 3.9 (median=4, range 0-12, InterQuartile Range - IQR (1st quartile=2; 3rd quartile=5)). In men (n=5,012) the average number of observed pathologies is 3.6 (median=3, range 0-12, InterQuartile Range - IQR (1st quartile=2; 3rd quartile=5)).

4. *Most common disorders seen in SARS-CoV-2 positive deceased patients by Intensive Care Unit (ICU) admission*

Table 2 presents the most common pre-existing chronic diseases (diagnosed before becoming infected) in deceased patients grouped into two groups: those who were transferred to the Intensive Care Unit - ICU (n = 1,825) and those who did not have this type of hospitalization and in which death occurred in the emergency room or other hospital wards (n = 6,437). For 174 deceased patients, this information was not available. In ICU deceased patients, the mean number of pathologies observed was 3.0 (median 3, SD 2.0); in people who have not been admitted to intensive care, the average number of observed pathologies is 3.9 (median 4, SD 2.1).

Ischemic heart disease, atrial fibrillation, heart failure, stroke, dementia, COPD, cancer, renal failure, and respiratory failure are more prevalent in deaths who have not admitted to the ICU.

Respiratory failure was the most commonly reported complication in the sample of deceased patients regardless of whether or not they were hospitalized in an intensive care unit. Non-respiratory complications (superinfection, acute kidney injury, acute myocardial damage) are all more prevalent in patients who died in intensive care units.

As already specified in paragraph 3, these data were obtained from a sample of deceased patients for whom it was possible to analyse the medical records.

Tabella 2. *Most common disorders detected in SARS-CoV-2 positive deceased patients by Intensive Care Unit (ICU) admission*

	Admitted to ICU		**Not admitted to ICU**		***p-value***
	Mean	***std. dev.***	**Mean**	***std. dev.***	
Age	68.2	*13.0*	82.4	*10.1*	*<0.001*
	N	***%***	**N**	***%***	
Women	510	*27.2*	2894	*44.4*	*<0.001*
Patologie	**N**	***%***	**N**	***%***	
Ischemic heart disease	374	*20.5*	1952	*30.3*	*<0.001*
Atrial Fibrillation	252	*13.8*	1834	*28.5*	*<0.001*
Heart failure	184	*9.8*	1142	*17.5*	*<0.001*
Stroke	99	*5.4*	832	*12.9*	*<0.001*
Hypertension	1173	*64.3*	4268	*66.3*	*0.111*
Type 2-Diabetes	552	*30.2*	1855	*28.8*	*0.243*
Dementia	85	*4.7*	1859	*28.9*	*<0.001*
COPD (Chronic Obstructive Pulmonary Disease)	291	*15.9*	1158	*18.0*	*0.043*
Active cancer in the past 5 years	201	*11.0*	1136	*17.6*	*<0.001*
Chronic liver disease	78	*4.3*	342	*5.3*	*0.080*
Chronic renal failure	286	*15.7*	1516	*23.6*	*<0.001*
Dialysis	41	*2.2*	151	*2.3*	*0.861*
Respiratory failure	106	*5.8*	486	*7.6*	*0.010*
HIV Infection	7	*0.4*	11	*0.2*	*0.092*
Autoimmune diseases	106	*5.8*	288	*4.5*	*0.021*
Obesity	465	*25.5*	508	*7.9*	*<0.001*

Number of comorbidities					
0 comorbidities	132	*7.2*	113	*1.8*	
1 comorbidity	315	*17.3*	614	*9.5*	*<0.001*
2 comorbidities	438	*24.0*	1037	*16.1*	
3 comorbidities and over	940	*51.5*	4673	*72.6*	
Complications from SARS-CoV-2 infection	**N**	***%***	**N**	***%***	
Acute respiratory distress syndrome	1745	*94.4*	5881	*93.1*	*0.043*
Acute renal injury	690	*37.3*	1404	*22.2*	*<0.001*
Acute cardiac injury	244	*13.0*	607	*9.3*	*<0.001*
Co-infection	782	*42.3*	942	*14.9*	*<0.001*

5. Characteristics of deaths by age group

Table 3 presents the most common pre-existing chronic diseases in deceased patients divided into 4 age groups (16-59, 60-69, 70-79, 80+ years). The prevalence of ischemic heart disease, atrial fibrillation, heart failure, stroke, arterial hypertension, dementia increase with age. On the other hand, prevalence of chronic liver disease, diseases for which dialysis is required, HIV infection, and obesity decrease with age increasing; for diabetes, COPD, and cancer prevalence decreases only in the last age group in contrast to the growth with age; for autoimmune diseases, on the contrary, prevalence increases only in the last age group, in contrast to the decreasing with age. As for the number of pathologies, the prevalence of those with 3 or more pathologies increases with age, while the prevalence of those with less than 3 pathologies decreases with age. For all the considered pathologies, the trend is statistically significant.

As for the complications related to SARS-CoV-2 infection, it is possible to observe how, with the exception of respiratory complications that are present in a homogeneous way in all age groups, non-respiratory complications are more commonly observed in the deceased of age < 70 years. This data indicate that, if in the very elderly deaths SARS-CoV-2 positive are linked to a greater vulnerability caused by pre-existing diseases, in the younger population, which has fewer chronic diseases, death is often associated with the coexistence of respiratory and non-respiratory complications of the infection.

Table 3. *Most common comorbidities observed in SARS-CoV-2 positive deceased patients by age-groups*

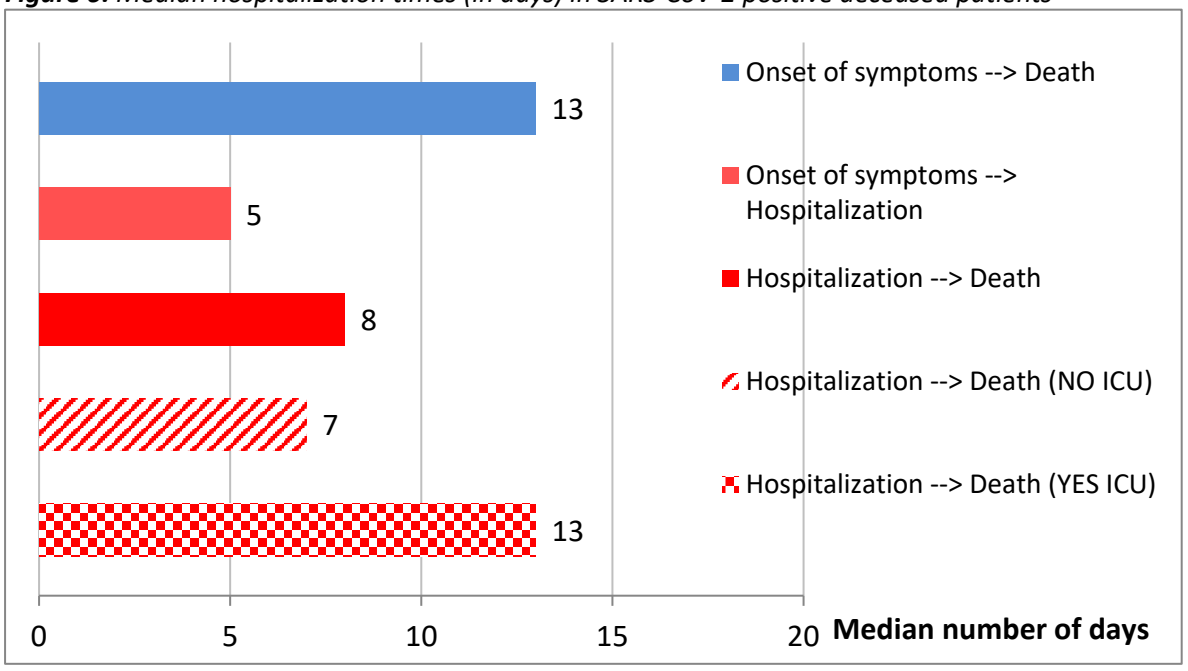
Age-groups	**16-59** (n=622)		**60-69** (n=828)		**70-79** (n=1,993)		**80+** (n=4,985)		**Total** (n=8,428)	
Diseases	**N**	***%***	**N**	***%***	**N**	***%***	**N**	***%***	**N**	***%***
Ischemic heart disease	40	*6.4*	169	*20.4*	576	*28.9*	1593	*32.0*	2378	*28.2*
Atrial Fibrillation	17	*2.7*	89	*10.7*	397	*19.9*	1611	*32.3*	2114	*25.1*
Heart Failure	31	*5.0*	75	*9.1*	260	*13.0*	982	*19.7*	1348	*16.0*
Stroke	18	*2.9*	66	*8.0*	202	*10.1*	664	*13.3*	950	*11.3*
Hypertension	231	*37.1*	492	*59.4*	1352	*67.8*	3475	*69.7*	5550	*65.9*
Type 2-Diabetes	151	*24.3*	271	*32.7*	717	*36.0*	1320	*26.5*	2459	*29.2*
Dementia	16	*2.6*	48	*5.8*	230	*11.5*	1693	*34.0*	1987	*23.6*
COPD (Chronic Obstructive Pulmonary Disease)	48	*7.7*	103	*12.4*	387	*19.4*	938	*18.8*	1476	*17.5*
Active cancer in the past 5 years	103	*16.6*	152	*18.4*	388	*19.5*	718	*14.4*	1361	*16.1*

Chronic liver disease	55	*8.8*	57	*6.9*	123	*6.2*	192	*3.9*	427	*5.1*
Dialysis	23	*3.7*	26	*3.1*	60	*3.0*	89	*1.8*	198	*2.3*
HIV Infection	12	*1.9*	2	*0.2*	4	*0.2*	1	*0.0*	19	*0.2*
Autoimmune diseases	46	*7.4*	48	*5.8*	83	*4.2*	220	*4.4*	397	*4.7*
Obesity	193	*31.0*	187	*22.6*	285	*14.3*	316	*6.3*	981	*11.6*
Number of comorbidities										
0 comorbidities	59	*9.5*	56	*6.8*	61	*3.1*	70	*1.4*	246	*2.9*
1 comorbidity	153	*24.6*	143	*17.3*	258	*12.9*	400	*8.0*	954	*11.3*
2 comorbidities	154	*24.8*	189	*22.8*	390	*19.6*	777	*15.6*	1510	*17.9*
3 comorbidities and over	256	*41.2*	440	*53.1*	1284	*64.4*	3738	*75.0*	5718	*67.8*
Complications from SARS-CoV-2 infection	N	*%*	N	*%*	N	*%*	N	*%*	N	*%*
Acute respiratory distress syndrome	589	*93.6*	770	*93.4*	1849	*95.1*	4517	*92.6*	7725	*93.4*
Acute renal injury	178	*28.3*	258	*31.3*	525	*27.0*	1144	*23.5*	2105	*25.4*
Acute cardiac injury	76	*12.1*	89	*10.8*	223	*11.5*	469	*9.6*	857	*10.4*
Co-infection	241	*38.3*	287	*34.8*	438	*22.5*	768	*15.8*	1734	*21.0*

6. Time-line

Figure 6 shows, for SARS-CoV-2 positive deceased patients whose medical records were analysed (N=8,436), the median times, in days, from the onset of symptoms to death (13 days), from the onset of symptoms to hospitalization (5 days) and from hospitalization to death (8 days). The time from hospitalization to death was 6 days longer in those who were transferred to intensive care than those who were not transferred (13 days vs. 7 days).

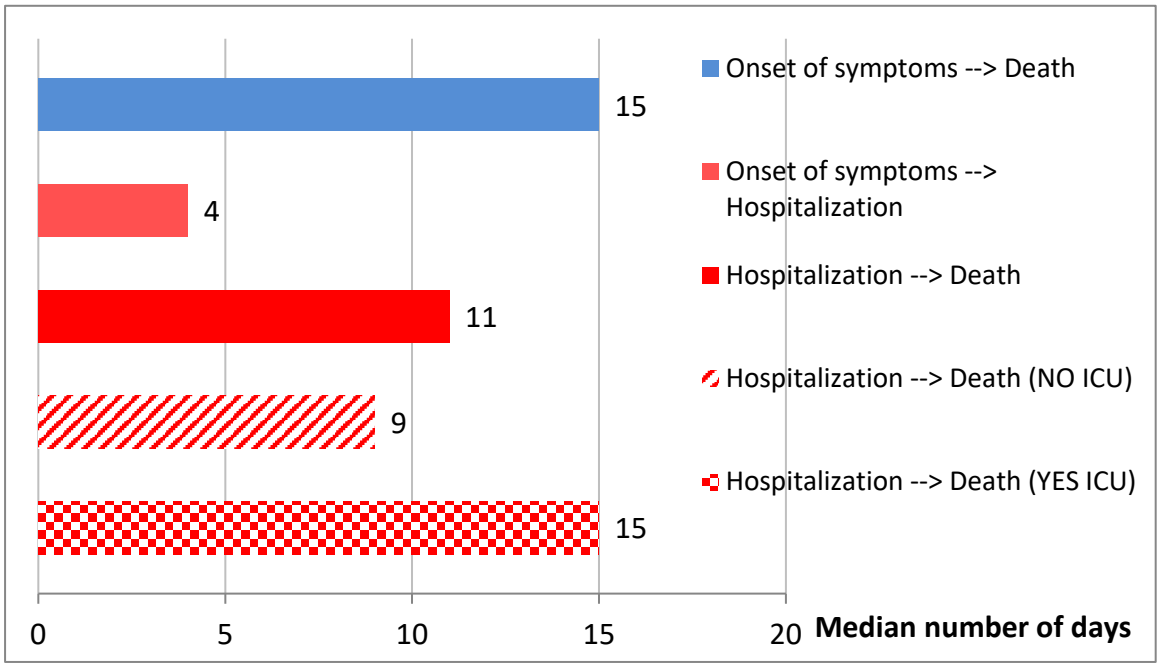
Figure 6. *Median hospitalization times (in days) in SARS-CoV-2 positive deceased patients*



If we restrict the assessment to the last 6 months (*Figure 6-bis*), we note how the median time from the onset of symptoms to death has increased, especially for those who are hospitalized in intensive care; the median time from the onset of symptoms to hospital admission was reduced. These positive data may be the

combined result of a greater timing in hospitalization, which means earlier initiation of treatment in an organism where the disease has not yet had its devastating effect, and improved care, even in intensive care.

Figure 6-bis. *Median hospitalization times (in days) in SARS-CoV-2 positive deceased patients during the last 6 months*



7. *Comparison of the characteristics of SARS-COV-2 positive deaths in 'unvaccinated', in those with 'incomplete course of vaccination', and in those with 'full course of vaccination*

The analysis here presented is proposed with the intention of comparing the characteristics of the SARS-COV-2 positive deceased in relation to their vaccination status.

All deaths with a confirmed diagnosis of SARS-CoV2 virus infection documented 14 days after completion of the vaccination course (i.e. 14 days after completion of the second dose for Pfizer-BioNtech, Moderna and AstraZeneca/Vaxzevria vaccines or 14 days after the single dose for the Janssen/Johnson & Johnson vaccine) are classified as 'full course of vaccination'. This definition is in line with the recommendations of the Center for Disease Control (CDC) in the United States (https://www.cdc.gov/coronavirus/2019-ncov/vaccines/fully-vaccinated.html). However, a full vaccination course does not guarantee 100% vaccination efficacy. In fact, controlled clinical studies have shown a vaccine efficacy of vaccines in use in Italy with values between 89% and 95% ("COVID-19 epidemic. 12th January 2022 national update" in Italian language; https://www.epicentro.iss.it/coronavirus/bollettino/Bollettino-sorveglianza-integrata-COVID-19_12-gennaio-2022.pdf).

All deaths with a documented SARS-CoV2 positive swab who had not yet received any vaccine dose of any kind or who had been vaccinated with a first dose (Pfizer-BioNtech, Moderna and AstraZeneca/Vaxzevria vaccines), or with a single dose vaccine (Janssen/Johnson&Johnson vaccine) in the 14 days prior to diagnosis, or that contracted the infection before the necessary time to develop an at least partial immune response to the vaccine, are classified as 'unvaccinated'. These are subjects who contracted the infection before vaccination.

The deceased with a positive swab for SARS-CoV2 documented at least 14 days after administration of the first dose, in subjects who have received a vaccine that includes a two-dose course (Pfizer-Biontech, Moderna and AstraZeneca/Vaxzevria vaccines) or within 14 days of administering the second dose are classified as 'incomplete course of vaccination'. It is worth to remind that an incomplete vaccination course provides less protection than a full vaccination course. These subjects contracted the infection before completing the vaccination course or in a period in which this had not yet stimulated a specific immune response sufficient to reduce susceptibility to infection.

For this analysis, the date of 02/01/2021 was chosen as the index date because it corresponds to the five weeks necessary for the completion of the vaccination cycle starting from the start of the vaccination campaign which took place on 12/27/2020. Furthermore, the data of deaths vaccinated with the booster dose is not presented separately because this was made available only in the last months of 2021.

7.1 – General population

From 01/02/2021 to 10/01/2022 there are 46,572 SARS-COV-2 positive deaths. Out of these, 39,292 SARS-COV-2 positive deaths are 'unvaccinated' (84.4% of all SARS-COV-2 positive deaths occurred in the period from 01/02/2021 to 10/01/2022), 1,935 SARS-COV-2 positive deaths are with an 'incomplete course of vaccination' (4.2%), and 5,345 SARS-COV-2 positive deaths are with a 'full course of vaccination' (11.5%). It should be noted that these data cannot provide information about the effectiveness of the vaccination but they are provided for purely descriptive purposes. It should also be noted that as of 01/10/2022 there were 46,633,748 people over 12 years of age that were vaccinated with a full course (over 14 days from the completion of the second dose for the Pfizer-BioNtech, Moderna and AstraZeneca/Vaxzevria vaccines or over 14 days from the administration of the single dose for the Janssen/Johnson&Johnson vaccine).

7.2 – Sample of clinical charts

Table 4 presents the most common clinical features in SARS-COV-2 positive deceased patients 'not vaccinated', in those with an 'incomplete course of vaccination', and in those with a 'full course of vaccination'.

The analysis here presented is based on a sample of 1,258 clinical charts related to deaths 'unvaccinated' (3.2% of 39.292 SARS-COV-2 positive deaths 'unvaccinated'), 58 clinical charts related to deaths with 'incomplete course of vaccination' (3.0% of 1,935 SARS-COV-2 positive deaths with 'incomplete course of vaccination'), and 326 clinical charts of deaths with 'complete course of vaccination' (6.1% of the 5,345 SARS-COV-2 positive deaths in vaccinated with 'complete course of vaccination') which occurred from the dates of 01/02/2021 and 10/01/2022.

Compared to the deceased 'unvaccinated', both those and with an 'incomplete course of vaccination' and those with a 'full course of vaccination' had a significantly higher average age (82.6 and 84.7 vs 78.3, respectively). Also the average number of observed pathologies is significantly higher in the group of vaccinated with an 'incomplete course of vaccination' and in those with a 'full course of vaccination' (5.0 and 4.9 vs 3.9 pre-existing pathologies); in particular, the presence of heart disease (ischemic heart disease and heart failure) is higher in deaths with an 'incomplete course of vaccination', while dementia, BPCO and cancer proved to be higher in deaths with a 'full course of vaccination'. The opposite happens with obesity, which is more prevalent in 'unvaccinated' deaths in comparison to deaths with a 'full course of vaccination' and to those with an 'incomplete course of vaccination'. In addition, in the 'full course of vaccination' population death occurs more frequently as a result of extra-respiratory complications (acute renal injury and acute myocardial injury) and less frequently due to respiratory failure.

Also in this case, as for the analysis of deaths presented in paragraphs from 3 to 6, it should be noted that the sample only represents deaths that occurred in subjects who needed hospitalization and refers to the sample for which the clinical charts, sent to the ISS by hospitals, are available. In this context, it should be noted that the average age in the sample of clinical charts of 'unvaccinated' deaths is 78.6 in comparison to an average age of all deaths in the same group of 78.1; the average age of deaths with an 'incomplete course of vaccination' is 82.6 years against an average age of all deaths in this group of 83.1 years; finally, the average age in the sample of clinical charts of deaths with a 'full course of vaccination' is 84.7 years against an average age of 82.7 for people who died under the same vaccination condition in the population. The proportion of women in the sample of clinical charts analysed in the 'unvaccinated' death group is 41,2% against 42.5% in the population; that of deaths with an 'incomplete course of vaccination' is 55.2% against 46.6% in the population, and that of deaths with a 'full course of vaccination' is 39.9% compared to 42.3% in the population.

The results here presented clearly indicate that people who died after completing the vaccination course have a high level of clinical complexity, significantly higher than people who could not benefit from the effect of the vaccine due to early contagion or because they haven't even started the vaccination course.

Furthermore, in the sample of deaths with a 'full course of vaccination', death is frequently linked to non-respiratory complications and therefore not typical of the infection. It is possible to hypothesize that very elderly patients with numerous diseases may have a reduced immune response and therefore be susceptible to SARS-CoV-2 infection and its complications despite having been vaccinated. These very fragile persons with a reduced immune response are those who can benefit most from a broad vaccination coverage of the entire population, as this would further reduce the risk of infection.

Table 4. *Clinical characteristics observed in SARS-COV-2 positive deceased patients 'unvaccinated', with an 'incomplete course of vaccination' and with a 'full course of vaccination'*

	Unvaccinated (n=1.258)		**Incomplete course of vaccination (n=58)**		**Full course of vaccination (n=326)**		***p-value***
	Mean	***std. dev.***	**Mean**	***std. dev.***	**Mean**	***std. dev.***	
Age	78.6	*13.4*	82.6	*13.1*	84.7	*9.7*	*<0.001*
	N	***%***	**N**	***%***	**N**	***%***	
Women	518	*41.2*	32	*55.2*	130	*39.9*	*0.088*
Diseases	**N**	***%***	**N**	***%***	**N**	***%***	
Ischemic heart disease	343	*27.6*	29	*50.0*	121	*37.2*	*<0.001*
Atrial Fibrillation	340	*27.4*	18	*31.0*	109	*33.5*	*0.087*
Heart failure	176	*14.2*	17	*29.3*	81	*24.9*	*<0.001*
Stroke	113	*9.1*	9	*15.5*	33	*10.2*	*0.245*
Hypertension	821	*66.2*	40	*69.0*	227	*69.8*	*0.429*
Type 2-Diabetes	347	*28.0*	16	*27.6*	95	*29.2*	*0.898*
Dementia	237	*19.1*	11	*19.0*	113	*34.8*	*<0.001*
COPD (Chronic Obstructive Pulmonary Disease)	210	*16.9*	6	*10.3*	74	*22.8*	*0.016*
Active cancer in the past 5 years	160	*12.9*	6	*10.3*	62	*19.1*	*0.012*
Chronic liver disease	64	*5.2*	5	*8.6*	17	*5.2*	*0.515*
Dialysis	40	*3.2*	2	*3.4*	11	*3.4*	*0.986*
HIV Infection	1	*0.1*	1	*1.7*	0	*0.0*	*0.002*
Autoimmune diseases	83	*6.7*	7	*12.1*	18	*5.5*	*0.183*
Obesity	197	*15.9*	3	*5.2*	28	*8.6*	*0.001*
Number of comorbidities							
0 comorbidities	37	*3.0*	0	*0.0*	2	*0.6*	
1 comorbidity	126	*10.2*	2	*3.4*	20	*6.2*	
2 comorbidities	211	*17.0*	7	*12.1*	31	*9.5*	*<0.001*
3 comorbidities and over	867	*69.9*	49	*84.5*	272	*83.7*	
Number of comorbidities	**Mean**	***std. dev.***	**Mean**	***std. dev.***	**Mean**	***std. dev.***	
	3.9	*2.2*	5.0	*2.2*	4.9	*2.5*	*<0.001*

Complications from SARS-CoV-2 infection	**N**	***%***	**N**	***%***	**N**	***%***	
Acute respiratory distress syndrome	1,172	*94.4*	45	*78.9*	277	*86.6*	*<0.001*
Acute renal injury	352	*28.4*	13	*22.8*	114	*35.6*	*0.021*
Acute cardiac injury	103	*8.3*	3	*5.3*	43	*13.4*	*0.010*
Co-infection	327	*26.3*	15	*26.3*	91	*28.4*	*0.751*

This report was produced by SARS-CoV-2 positive deaths surveillance Group

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