

# SUPPLEMENTARY MATERIAL

## SUMMARY

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**Table S1:** SARS-CoV-2 infections by educational level, sex, and age. Crude cumulative incidence (CCI) with 95% CI and  $\chi^2$  p-value for comparison. Rome, 35+ years old, 1-03-2020 to 31-12-2020.

ENTIRE PERIOD									
SARS-CoV-2 INFECTION									
	No		Yes		All	CCI*1000	95% CI		p-value
	N	%	N	%	N				
	1490495	100	47736	100	1538231				
EDUCATIONAL LEVEL									
Low	610746	40.98	19999	41.9	630745	31.71	31.27	32.15	<0.001
Medium	538178	36.11	17707	37.09	555885	31.85	31.39	32.33	<0.001
High	341571	22.92	10030	21.01	351601	28.53	27.97	29.09	
SEX									
Male	662069	44.42	22384	46.89	684453	32.70	32.28	33.13	<0.001
Female	828426	55.58	25352	53.11	853778	29.69	29.33	30.06	
AGE CLASSES									
35-44	234567	15.74	8487	17.78	243054	34.92	34.18	35.67	<0.001
45-54	364192	24.43	13653	28.6	377845	36.13	35.53	36.74	<0.001
55-64	329347	22.1	11053	23.15	340400	32.47	31.87	33.08	<0.001
65-74	260956	17.51	6276	13.15	267232	23.48	22.91	24.07	<0.001
75-79	112803	7.57	2653	5.56	115456	22.98	22.12	23.87	<0.001
80+	188630	12.66	5614	11.76	194244	28.90	28.16	29.67	
MARCH-MAY									
SARS-CoV-2 INFECTION									
	No		Yes		All	CCI*1000	95% CI		p-value
	N	%	N	%	N				
	1535446	100	2191	100	1537637				
EDUCATIONAL LEVEL	629342	40.99	995	45.41	630337				
Low						1.58	1.48	1.68	<0.001
Medium	555158	36.16	603	27.52	555761	1.08	1.00	1.18	<0.001
High	350946	22.86	593	27.07	351539	1.69	1.56	1.83	
SEX									
Male	683062	44.49	1089	49.7	684151	1.59	1.50	1.69	<0.001
Female	852384	55.51	1102	50.3	853486	1.29	1.22	1.37	
AGE CLASSES									
35-44	242858	15.82	195	8.9	243053				
						0.80	0.70	0.92	<0.001
45-54	377417	24.58	417	19.03	377834	1.10	1.00	1.21	<0.001
55-64	339917	22.14	440	20.08	340357	1.29	1.18	1.42	<0.001
65-74	266762	17.37	357	16.29	267119	1.34	1.20	1.48	<0.001
75-79	115176	7.5	192	8.76	115368	1.66	1.44	1.92	<0.001
80+	193316	12.59	590	26.93	193906	3.04	2.81	3.30	
JUNE-AUGUST									
SARS-CoV-2 INFECTION									
	No		Yes		All	CCI*1000	95% CI		p-value
	N	%	N	%	N				
	1536365	100	849	100	1537214				
						0.55	0.52	0.59	

<b>EDUCATIONAL LEVEL</b>	629705	40.99	327	38.52	630032				
<b>Low</b>						0.52	0.47	0.58	<0.001
<b>Medium</b>	555373	36.15	320	37.69	555693	0.58	0.52	0.64	<0.001
<b>High</b>	351287	22.86	202	23.79	351489	0.57	0.50	0.66	
<b>SEX</b>									
<b>Male</b>	683500	44.49	422	49.71	683922	0.62	0.56	0.68	<0.001
<b>Female</b>	852865	55.51	427	50.29	853292	0.50	0.46	0.55	
<b>AGE CLASSES</b>									
<b>35-44</b>	242885	15.81	166	19.55	243051	0.68	0.59	0.80	<0.001
<b>45-54</b>	377567	24.58	260	30.62	377827	0.69	0.61	0.78	<0.001
<b>55-64</b>	340152	22.14	182	21.44	340334	0.53	0.46	0.62	<0.001
<b>65-74</b>	266956	17.38	96	11.31	267052	0.36	0.29	0.44	<0.001
<b>75-79</b>	115265	7.5	47	5.54	115312	0.41	0.31	0.54	<0.001
<b>80+</b>	193540	12.6	98	11.54	193638	0.51	0.42	0.62	

#### SEPTEMBER-DECEMBER

SARS-CoV-2 INFECTION									
	No		Yes		All	CCI*1000	95% CI		p-value
	N	%	N	%	N				
	1493004	100	44093	100	1537097				
EDUCATIONAL LEVEL	611681	40.97	18261	41.41	629942				
Low						28.99	28.57	29.41	<0.001
Medium	539016	36.1	16659	37.78	555675	29.98	29.53	30.44	<0.001
High	342307	22.93	9173	20.8	351480	26.10	25.57	26.64	
SEX	663311	44.43	20566	46.64	683877				
Male						30.07	29.66	30.49	<0.001
Female	829693	55.57	23527	53.36	853220	27.57	27.23	27.93	
AGE CLASSES	234926	15.74	8125	18.43	243051				
35-44						33.43	32.71	34.16	<0.001
45-54	364861	24.44	12965	29.4	377826	34.31	33.73	34.91	<0.001
55-64	329945	22.1	10388	23.56	340333	30.52	29.94	31.12	<0.001
65-74	261319	17.5	5708	12.95	267027	21.38	20.83	21.94	<0.001
75-79	112972	7.57	2325	5.27	115297	20.17	19.36	21.00	<0.001
80+	188981	12.66	4582	10.39	193563	23.67	23.00	24.37	

\* $\chi^2$  p-value after Bonferroni adjustment for multiple comparison.

**Table S2.** Univariate and multivariable log-binomial regression model. RR, 95% CI and p-value.

ENTIRE PERIOD								
	Unadjusted analysis				Adjusted analysis			
	RR	95% CI	p-value		RR	95% CI	p-value	
<b>EDUCATIONAL LEVEL</b>								
<b>Low</b>	1.11	1.09	1.14	<.0001	1.23	1.20	1.26	<.0001
<b>Medium</b>	1.12	1.09	1.14	<.0001	1.12	1.09	1.15	<.0001
<b>High</b>	1.00				1.00			
<b>SEX</b>								
<b>Male</b>	1.10	1.08	1.11	<.0001	1.09	1.07	1.11	<.0001
<b>Female</b>	1.00				1.00			
<b>AGE CLASSES</b>								
<b>35-44</b>	1.11	1.07	1.14	<.0001	1.28	1.24	1.33	<.0001
<b>45-54</b>	1.17	1.14	1.20	<.0001	1.31	1.27	1.35	<.0001
<b>55-64</b>	1.07	1.04	1.10	<.0001	1.17	1.13	1.20	<.0001
<b>65-74</b>	0.79	0.76	0.82	<.0001	0.83	0.80	0.86	<.0001
<b>75-79</b>	0.79	0.76	0.83	<.0001	0.80	0.77	0.84	<.0001
<b>80+</b>	1.00				1.00			
MARCH-MAY								
	Unadjusted analysis				Adjusted analysis			
	RR	95% CI	p-value		RR	95% CI	p-value	
<b>EDUCATIONAL LEVEL</b>								
<b>Low</b>	0.94	0.85	1.04	0.2003	0.71	0.64	0.79	<.0001
<b>Medium</b>	0.64	0.57	0.72	<.0001	0.64	0.57	0.71	<.0001
<b>High</b>	1.00				1.00			
<b>SEX</b>								
<b>Male</b>	1.21	1.12	1.31	<.0001	1.29	1.19	1.41	<.0001
<b>Female</b>	1.00				1.00			
<b>AGE CLASSES</b>								
<b>35-44</b>	0.27	0.24	0.31	<.0001	0.24	0.21	0.29	<.0001
<b>45-54</b>	0.35	0.31	0.39	<.0001	0.34	0.30	0.39	<.0001
<b>55-64</b>	0.42	0.38	0.48	<.0001	0.41	0.36	0.46	<.0001
<b>65-74</b>	0.44	0.39	0.50	<.0001	0.42	0.37	0.48	<.0001
<b>75-79</b>	0.56	0.48	0.65	<.0001	0.54	0.45	0.63	<.0001
<b>80+</b>	1.00				1.00			
JUNE-AUGUST								
	Unadjusted analysis				Adjusted analysis			
	RR	95% CI	p-value		RR	95% CI	p-value	
<b>EDUCATIONAL LEVEL</b>								
<b>Low</b>	0.90	0.76	1.08	0.2547	1.02	0.85	1.22	0.8492
<b>Medium</b>	1.00	0.84	1.19	0.9821	1.01	0.85	1.21	0.9071
<b>High</b>	1.00				1.00			
<b>SEX</b>								
<b>Male</b>	1.24	1.10	1.40	0.0005	1.22	1.06	1.39	0.0044
<b>Female</b>	1.00				1.00			
<b>AGE CLASSES</b>								
<b>35-44</b>	1.47	1.17	1.85	0.0008	1.33	1.03	1.72	0.0318
<b>45-54</b>	1.39	1.11	1.73	0.0035	1.34	1.05	1.70	0.017
<b>55-64</b>	1.07	0.84	1.35	0.5865	1.04	0.81	1.34	0.7529

<b>65-74</b>	0.71	0.54	0.93	0.0142	0.70	0.53	0.93	0.0143
<b>75-79</b>	0.83	0.59	1.15	0.2609	0.80	0.56	1.13	0.2036
<b>80+</b>	1.00				1.00			
<b>SEPTEMBER-DECEMBER</b>								
	<b>Unadjusted analysis</b>				<b>Adjusted analysis</b>			
	<b>RR</b>	<b>95% CI</b>		<b>p-value</b>	<b>RR</b>	<b>95% CI</b>		<b>p-value</b>
<b>EDUCATIONAL LEVEL</b>								
<b>Low</b>	1.11	1.08	1.14	<.0001	1.27	1.23	1.30	<.0001
<b>Medium</b>	1.15	1.12	1.18	<.0001	1.15	1.13	1.18	<.0001
<b>High</b>	1.00				1.00			
<b>SEX</b>								
<b>Male</b>	1.08	1.07	1.10	<.0001	1.07	1.05	1.09	<.0001
<b>Female</b>	1.00				1.00			
<b>AGE CLASSES</b>								
<b>35-44</b>	1.28	1.24	1.33	<.0001	1.51	1.46	1.57	<.0001
<b>45-54</b>	1.35	1.31	1.39	<.0001	1.53	1.48	1.59	<.0001
<b>55-64</b>	1.22	1.18	1.26	<.0001	1.34	1.30	1.39	<.0001
<b>65-74</b>	0.87	0.84	0.91	<.0001	0.93	0.89	0.96	0.0002
<b>75-79</b>	0.85	0.81	0.89	<.0001	0.86	0.82	0.90	<.0001
<b>80+</b>	1.00				1.00			

\*Adjusted for age and sex. p-value after Bonferroni adjustment for multiple comparison.

**Table S3:** Deaths within 30 days of infection by educational level, sex, and age. Crude mortality rate (CMR) with 95% CI and  $\chi^2$  p-value. Rome, 35+ years old, 1-03-2020 to 31-12-2020.

ENTIRE PERIOD									
Dead within 30 days of infection									
	No		Yes		All	CMR*1000	95% CI		p-value
	N	%	N	%	N				
	45455	100	2281	100	47736	47.78	45.86	49.79	
<b>EDUCATIONAL LEVEL</b>									
Low	18385	40.45	1614	70.76	19999	80.70	76.86	84.74	<0.001
Medium	17269	37.99	438	19.2	17707	24.74	22.53	27.17	<0.001
High	9801	21.56	229	10.04	10030	22.83	20.06	25.99	
<b>SEX</b>									
Male	21100	46.42	1284	56.29	22384	57.36	54.31	60.59	<0.001
Female	24355	53.58	997	43.71	25352	39.32	36.96	41.84	
<b>AGE CLASSES</b>									
35-44	8477	18.65	10	0.44	8487	1.18	0.63	2.19	<0.001
45-54	13605	29.93	48	2.1	13653	3.52	2.65	4.67	<0.001
55-64	10911	24	142	6.23	11053	12.85	10.90	15.14	<0.001
65-74	5865	12.9	411	18.02	6276	65.49	59.45	72.14	<0.001
75-79	2308	5.08	345	15.12	2653	130.04	117.02	144.51	<0.001
80+	4289	9.44	1325	58.09	5614	236.03	223.64	249.08	
<b>MARCH-MAY</b>									
Dead within 30 days of infection									
	No		Yes		All	CMR*1000	95% CI		p-value
	N	%	N	%	N				
	1847	100	344	100	2191	157.00	141.27	174.51	
<b>EDUCATIONAL LEVEL</b>									
Low	750	40.61	245	71.22	995	246.23	217.25	279.07	<0.001
Medium	549	29.72	44	12.79	593	91.21	70.03	118.80	<0.001
High	548	29.67	55	15.99	603	74.20	55.22	99.71	
<b>SEX</b>									
Male	951	51.49	151	43.9	1102	177.23	153.91	204.09	<0.001
Female	896	48.51	193	56.1	1089	137.02	116.82	160.72	
<b>AGE CLASSES</b>									
35-44	193	10.45	2	0.58	195	10.26	2.56	41.01	<0.001
45-54	410	22.2	7	2.03	417	16.79	8.00	35.21	<0.001
55-64	423	22.9	17	4.94	440	38.63	24.02	62.15	<0.001
65-74	305	16.51	52	15.12	357	145.66	110.99	191.15	<0.001
75-79	142	7.69	50	14.53	192	260.41	197.37	343.59	<0.001
80+	374	20.25	216	62.79	590	366.12	320.40	418.32	
<b>JUNE-AUGUST</b>									
Dead within 30 days of infection									
	No		Yes		All	CMR*1000	95% CI		p-value
	N	%	N	%	N				
	814	100	35	100	849	41.23	29.60	57.42	

<b>EDUCATIONAL LEVEL</b>									
<b>Low</b>	301	36.98	26	74.29	327	79.51	54.14	116.78	<0.001
<b>Medium</b>	199	24.45	3	8.57	202	18.75	8.42	41.74	<0.001
<b>High</b>	314	38.57	6	17.14	320	14.85	4.79	46.05	
<b>SEX</b>									
<b>Male</b>	406	49.75	23	65.71	429	28.44	16.15	50.07	<0.001
<b>Female</b>	410	50.25	12	34.29	422	53.86	35.79	81.06	
<b>AGE CLASSES</b>									
<b>35-44</b>	166	20.39	.	.	166	.	.	.	<0.001
<b>45-54</b>	259	31.82	1	2.86	260	3.85	0.54	27.30	<0.001
<b>55-64</b>	182	22.36	.	.	182	.	.	.	<0.001
<b>65-74</b>	92	11.3	4	11.43	96	41.66	15.64	111.01	<0.001
<b>75-79</b>	42	5.16	5	14.29	47	106.38	44.28	255.59	<0.001
<b>80+</b>	73	8.97	25	71.43	98	255.10	172.37	377.53	

#### SEPTEMBER-DECEMBER

<b>Dead within 30 days of infection</b>									
	<b>No</b>		<b>Yes</b>		<b>All</b>	<b>CMR*1000</b>	<b>95% CI</b>		<b>p-value</b>
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>				
	<b>42431</b>	<b>100</b>	<b>1662</b>	<b>100</b>	<b>44093</b>	<b>37.69</b>	<b>35.92</b>	<b>39.55</b>	
<b>EDUCATIONAL LEVEL</b>									
<b>Low</b>	17083	40.26	1178	70.88	18261	64.51	60.93	68.30	<0.001
<b>Medium</b>	9013	21.24	160	9.63	9173	19.45	17.44	21.69	<0.001
<b>High</b>	16335	38.5	324	19.49	16659	17.44	14.94	20.37	
<b>SEX</b>									
<b>Male</b>	22801	53.74	726	43.68	23527	45.51	42.69	48.52	<0.001
<b>Female</b>	19630	46.26	936	56.32	20566	30.86	28.69	33.19	
<b>AGE CLASSES</b>									
<b>35-44</b>	8117	19.13	8	0.48	8125	0.98	0.49	1.97	<0.001
<b>45-54</b>	12927	30.47	38	2.29	12965	2.93	2.13	4.03	<0.001
<b>55-64</b>	10279	24.23	109	6.56	10388	10.49	8.70	12.66	<0.001
<b>65-74</b>	5403	12.73	305	18.35	5708	53.43	47.76	59.78	<0.001
<b>75-79</b>	2081	4.9	244	14.68	2325	104.95	92.57	118.98	<0.001
<b>80+</b>	3624	8.54	958	57.64	4582	209.09	196.24	222.75	

\* $\chi^2$  p-value after Bonferroni adjustment for multiple comparison.

**Table S4:** Univariate and multivariable Cox regression model. HR, 95% CI and p-value.

ENTIRE PERIOD								
Unadjusted analysis					Adjusted analysis			
	HR	95% CI		p-value	HR	95% CI		p-value
EDUCATIONAL LEVEL								
Low	3.64	3.17	4.18	<.0001	1.37	1.19	1.58	<.0001
Medium	1.08	0.92	1.27	0.3292	1.14	0.97	1.33	0.1197
High	1.00				1.00			
SEX								
Male	1.47	1.35	1.60	<.0001	1.95	1.79	2.12	<.0001
Female	1.00				1.00			
AGE CLASSES								
35-44	0.004	0.002	0.008	<.0001	0.01	0.00	0.01	<.0001
45-54	0.013	0.010	0.017	<.0001	0.01	0.01	0.02	<.0001
55-64	0.048	0.040	0.057	<.0001	0.05	0.04	0.06	<.0001
65-74	0.250	0.223	0.279	<.0001	0.23	0.21	0.26	<.0001
75-79	0.512	0.455	0.576	<.0001	0.48	0.42	0.54	<.0001
80+	1.00				1.00			
MARCH-MAY								
Unadjusted analysis					Adjusted analysis			
	HR	95% CI		p-value	HR	95% CI		p-value
EDUCATIONAL LEVEL								
Low	3.65	2.65	5.03	<.0001	1.39	0.99	1.96	0.0562
Medium	1.23	0.83	1.83	0.3015	1.11	0.75	1.66	0.6034
High	1.00				1.00			
SEX								
Male	1.32	1.06	1.63	0.0117	1.80	1.45	2.24	<.0001
Female	1.00				1.00			
AGE CLASSES								
35-44	0.02	0.01	0.09	<.0001	0.03	0.01	0.11	<.0001
45-54	0.04	0.02	0.08	<.0001	0.04	0.02	0.09	<.0001
55-64	0.09	0.05	0.14	<.0001	0.09	0.05	0.14	<.0001
65-74	0.34	0.25	0.46	<.0001	0.33	0.24	0.45	<.0001
75-79	0.65	0.48	0.89	0.0066	0.64	0.47	0.87	0.0043
80+	1.00				1.00			
JUNE-AUGUST								
Unadjusted analysis					Adjusted analysis			
	HR	95% CI		p-value	HR	95% CI		p-value
EDUCATIONAL LEVEL								
Low	5.52	1.67	18.22	0.0051	0.91	0.26	3.12	0.8748
Medium	1.27	0.32	5.07	0.7378	1.07	0.27	4.34	0.9211
High	1.00				1.00			
SEX								
Male	0.52	0.26	1.05	0.0694	0.56	0.81	0.40	0.3396
Female	1.00				1.00			
AGE CLASSES								
35-44								



<b>45-54</b>	0.013	0.002	0.099	<.0001	0.013	0.002	0.100	<.0001
<b>55-64</b>								
<b>65-74</b>	0.149	0.052	0.427	0.0004	0.151	0.052	0.440	0.0005
<b>75-79</b>	0.390	0.149	1.019	0.0546	0.395	0.149	1.044	0.061
<b>80+</b>	1.00				1.00			

#### SEPTEMBER-DECEMBER

	Unadjusted analysis				Adjusted analysis			
	HR	95% CI	p-value		HR	95% CI	p-value	
<b>EDUCATIONAL LEVEL</b>								
<b>Low</b>	3.79	3.21	4.47	<.0001	1.43	1.21	1.69	<.0001
<b>Medium</b>	1.12	0.92	1.35	0.2566	1.18	0.97	1.42	0.0942
<b>High</b>	1.00				1.00			
<b>SEX</b>								
<b>Male</b>	1.49	1.35	1.64	<.0001	1.98	1.79	2.18	<.0001
<b>Female</b>	1.00				1.00			
<b>AGE CLASSES</b>								
<b>35-44</b>	0.004	0.002	0.008	<.0001	0.004	0.002	0.009	<.0001
<b>45-54</b>	0.012	0.009	0.017	<.0001	0.013	0.009	0.018	<.0001
<b>55-64</b>	0.045	0.037	0.055	<.0001	0.044	0.036	0.053	<.0001
<b>65-74</b>	0.233	0.205	0.265	<.0001	0.217	0.191	0.248	<.0001
<b>75-79</b>	0.469	0.407	0.539	<.0001	0.435	0.378	0.501	<.0001
<b>80+</b>	1.00				1.00			

\*Adjusted for age and sex. p-value after Bonferroni adjustment for multiple comparison.