



Research article

Evolution of the COVID-19 pandemic in Italy at the national and regional levels from February 2020 to March 2022

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Supplementary



Figure S1. Regions of Italy: names and locations.

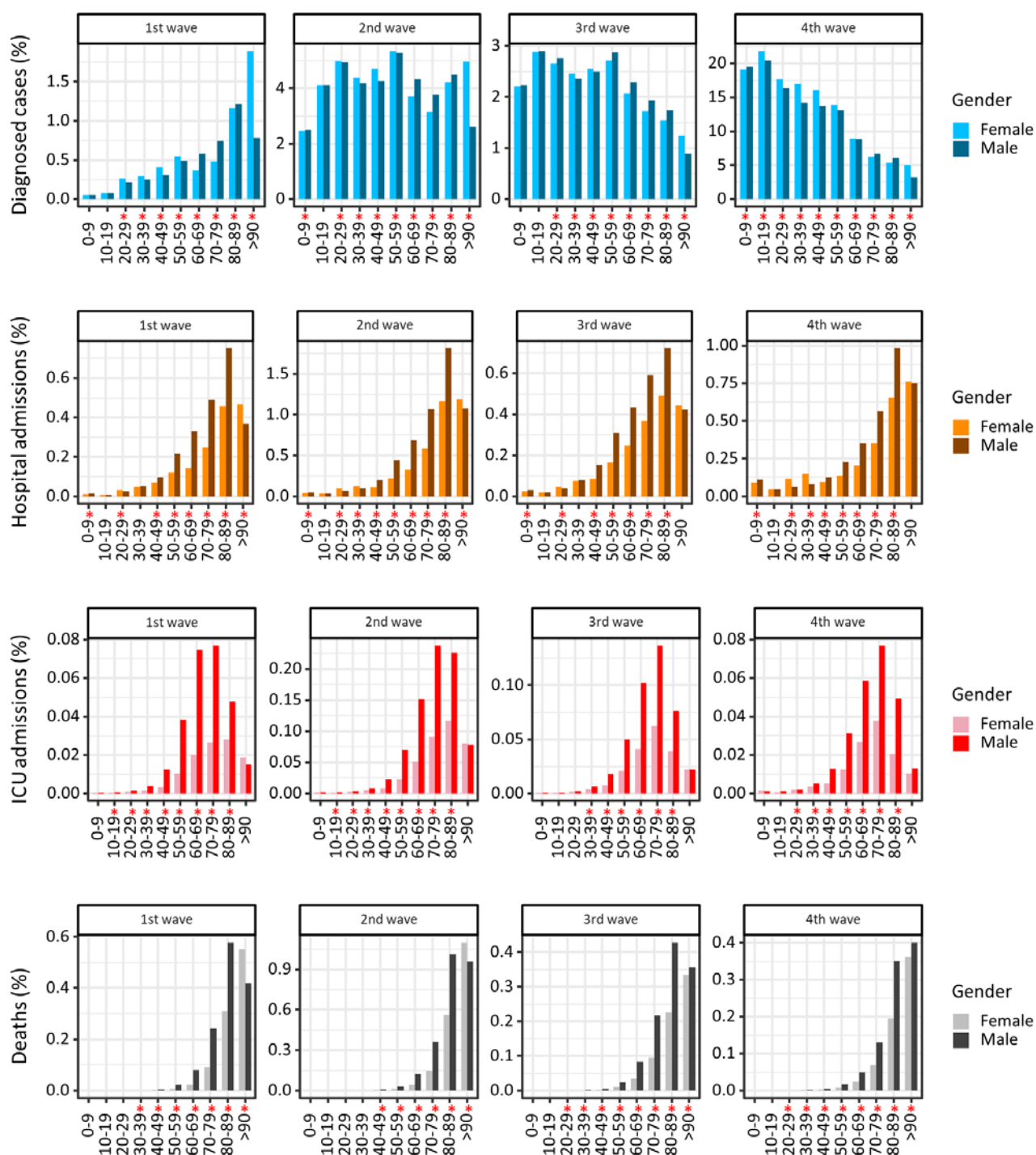


Figure S2. Distributions of diagnosed cases, hospital and ICU admissions and deaths stratified by gender and decades of age of the population. The red asterisks underneath the bars indicate significant differences for gender ($P < 0.05$).

Table S1. Incidences per 100000 inhabitants of diagnosed cases, hospital and ICU admissions and deaths associated with the four SARS-CoV-2 waves at the regional level.

Regions	Diagnosed cases						Hospital admissions						ICU admissions						Deaths					
	1st wave	2nd wave	3rd wave	4th wave	P	T	1st wave	2nd wave	3rd wave	4th wave	P	T	1st wave	2nd wave	3rd wave	4th wave	P	T	1st wave	2nd wave	3rd wave	4th wave	P	T
Abruzzo	261	3699	1833	14963	<0.001	↗	93.5	357	208	225	<0.001	↗	10.4	35.6	24.7	18.5	0.53	↔	36.6	95.6	61.0	38.7	0.41	↔
Basilicata	76.6	2493	2161	10852	<0.001	↗	22.2	79.5	27.7	53.7	0.16	↔	5.40	10.7	10.0	4.70	0.82	↔	5.50	63.7	39.0	23.6	0.25	↔
Calabria	67.1	1740	1646	6563	<0.001	↗	19.0	108	110	149	<0.001	↗	2.70	15.8	16.2	18.1	0.004	↗	5.10	29.1	29.3	39.0	<0.001	↗
Campania	90.6	4473	2861	13984	<0.001	↗	19.3	118	109	143	<0.001	↗	2.30	14.7	8.30	12.2	0.09	↔	7.90	71.8	59.7	37.5	0.01	↗
Emilia-R.	668	4929	3116	18232	<0.001	↗	254	490	331	397	0.002	↗	21.4	41.1	35.5	29.4	0.47	↔	99.7	134	63.7	61.9	<0.001	↘
Friuli-V.G.	283	5785	2756	13968	<0.001	↗	76.3	379	203	258	<0.001	↗	9.2	51.6	35.4	26.4	0.15	↔	30.0	205	83.8	65.8	0.76	↔
Lazio	150	3072	1802	11742	<0.001	↗	52.8	328	184	211	<0.001	↗	6.10	37.2	22.8	18.5	0.27	↔	16.4	89.1	42.2	35.0	0.77	↔
Liguria	668	4226	1813	15562	<0.001	↗	301	537	204	298	<0.001	↘	31.0	34.9	17.5	14.6	0.003	↘	105	125	47.9	51.4	<0.001	↘
Lombardia	958	4841	2631	15152	<0.001	↗	457	529	328	300	<0.001	↘	42.1	19.7	28.0	14.5	<0.001	↘	169	112	56.2	50.5	<0.001	↘
Marche	490	3730	2640	14289	<0.001	↗	150	199	132	206	0.079	↔	17.6	23.5	28.3	16.4	0.95	↔	60.1	84.6	55.0	36.5	0.003	↘
Molise	155	3191	1205	8924	<0.001	↗	35.2	223	98.4	87.9	0.48	↔	3.30	30.3	20.4	7.20	0.92	↔	7.60	104	51.7	25.7	0.96	↔
P.A. Bolzano	512	9738	2000	20011	<0.001	↗	136	503	111	248	0.42	↔	22.3	31.7	12.1	18.3	0.12	↔	55.1	150	30.0	34.7	<0.001	↘
P.A. Trento	914	5166	2559	17454	<0.001	↗	183	579	200	257	0.04	↘	23.7	53.9	33.5	23.4	0.41	↔	74.5	145	31.1	29.8	<0.001	↘
Piemonte	734	4834	2880	14187	<0.001	↗	160	399	171	113	<0.001	↘	45.7	257	95.9	7.30	<0.001	↘	100	115	43.1	18.2	<0.001	↘
Puglia	118	3429	2872	12675	<0.001	↗	44.0	290	211	136	<0.001	↗	7.10	44.5	36.6	14.1	0.56	↔	14.3	83.6	69.2	25.7	0.52	↔
Sardegna	87.2	2361	1095	8534	<0.001	↗	21.0	205	83.6	204	<0.001	↗	5.20	18.5	7.30	10.2	0.79	↔	8.30	70.8	18.4	44.3	0.037	↗
Sicilia	68.2	2992	1747	12023	<0.001	↗	24.6	254	131	293	<0.001	↗	4.30	39.3	18.1	34.4	0.002	↗	6.40	82.7	31.2	73.6	<0.001	↗
Toscana	272	3801	2601	17799	<0.001	↗	81.4	209	178	158	<0.001	↗	5.70	25.6	24.0	14.4	0.19	↔	30.0	91.7	64.1	49.5	0.37	↔
Umbria	168	4766	1587	15869	<0.001	↗	43.4	399	198	240	<0.001	↗	9.20	64.1	30.2	15.8	0.56	↔	9.20	106	47.8	35.8	0.49	↔
V. d'Aosta	964	5282	2872	8823	<0.001	↗	271	607	269	382	0.94	↔	39.8	56.5	35.0	34.2	0.18	↔	116	215	44.6	49.3	<0.001	↘
Veneto	416	6334	2069	18828	<0.001	↗	111	394	153	266	<0.001	↗	16.8	51.6	27.0	33.0	0.34	↔	42.6	161	34.5	46.8	0.003	↔

Note: P-values refer to the temporal trend significance; T indicates the trend. Significant increasing trend: ↗; no significant trend: ↔; significant decreasing trend: ↘.

Table S2. Incidences per 100000 inhabitants of active cases, occupancies of hospital and ICU beds and deaths related to the four Covid-19 pandemic peaks at the regional level. The incidences were computed on a time interval of one month.

Regions	Active cases						Occupancy of hospital beds						Occupancy of ICU beds						Deaths					
	1st peak	2nd peak	3rd peak	4th peak	P	T	1st peak	2nd peak	3rd peak	4th peak	P	T	1st peak	2nd peak	3rd peak	4th peak	P	T	1st peak	2nd peak	3rd peak	4th peak	P	T
Abruzzo	2609	37264	26302	229165	<0.001	↗	673	1537	1507	1040	<0.001	↗	141	162	185	86.7	0.009	↘	18.3	31.6	30.5	14.9	0.61	↔
Basilicata	1000	29519	27306	96704	<0.001	↗	187	804	953	509	<0.001	↗	73.4	120	74.1	22.0	<0.001	↘	3.8	22.4	19.5	11.3	0.25	↔
Calabria	855	15206	17402	65857	<0.001	↗	204	623	643	682	<0.001	↗	26.0	59.3	60.7	51.0	0.015	↗	3.7	12.0	9.9	16.1	0.06	↔
Campania	1002	52284	52878	125487	<0.001	↗	238	1133	880	732	<0.001	↗	52.4	97.5	88.0	49.5	0.63	↔	4.7	23.0	21.0	15.5	0.09	↔
Emilia-R.	7029	44097	50711	206674	<0.001	↗	2263	1786	2344	1754	<0.001	↘	224	168	266	106	<0.001	↘	57.1	35.0	32.3	24.3	<0.001	↘
Friuli-V.G.	2706	32494	37347	141877	<0.001	↗	463	1387	1539	1165	<0.001	↗	110	138	208	107	0.27	↔	16.4	58.5	45.3	27.3	0.47	↔
Lazio	1316	43772	27685	140656	<0.001	↗	528	1707	1593	1081	<0.001	↗	76.8	175	200	111	0.016	↗	5.2	23.8	17.6	12.5	0.36	↔
Liguria	4723	27109	14405	76124	<0.001	↗	1873	2278	1310	1476	<0.001	↘	297	218	149	78.3	<0.001	↘	50.9	43.4	20.2	20.9	<0.001	↘
Lombardia	7504	41970	29382	134919	<0.001	↗	3344	2291	2112	1010	<0.001	↘	379	265	263	78.3	<0.001	↘	104	50.0	28.4	24.6	<0.001	↘
Marche	5900	31669	19381	43566	<0.001	↗	1855	1097	1603	630	<0.001	↘	293	170	294	119	<0.001	↘	46.7	20.8	26.7	13.2	<0.001	↘
Molise	1218	24113	10207	88867	<0.001	↗	261	588	735	325	<0.001	↗	64.2	93.2	168	26.3	0.35	↔	4.9	32.3	20.1	11.9	0.64	↔
P.A. Bolzano	5862	63645	7832	127965	<0.001	↗	1191	2542	595	641	<0.001	↘	261	218	137	85.6	<0.001	↘	41.5	50.3	13.8	10.6	<0.001	↘
P.A. Trento	7916	14879	16766	129159	<0.001	↗	1701	2270	1089	836	<0.001	↘	345	232	280	131	<0.001	↘	58.1	50.2	14.9	11.2	<0.001	↘
Piemonte	5602	50903	23911	106512	<0.001	↗	2054	3413	2677	1488	<0.001	↘	274	265	254	96.8	<0.001	↘	45.2	51.3	27.7	14.6	<0.001	↘
Puglia	1204	26702	37731	92107	<0.001	↗	376	1149	1467	537	<0.001	↗	59.8	151	195	50.3	0.76	↔	7.0	24.9	27.4	9.4	0.60	↔
Sardegna	1144	23860	29029	45462	<0.001	↗	181	1026	469	613	<0.001	↗	39.7	125	73.3	59.2	0.86	↔	5.1	17.8	6.6	11.0	0.65	↔
Sicilia	831	22326	12761	141022	<0.001	↗	259	935	606	910	<0.001	↗	38.2	142	92.6	97.6	0.003	↗	3.6	24.3	15.5	25.8	0.002	↗
Toscana	3344	36677	23590	136927	<0.001	↗	777	1352	1349	1115	<0.001	↗	205	228	229	98.6	<0.001	↘	14.9	38.9	22.8	24.6	0.56	↔
Umbria	2420	32091	17850	92143	<0.001	↗	461	1252	1245	753	<0.001	↗	138	234	209	36.2	<0.001	↘	6.1	34.4	18.1	17.2	0.38	↔
V. d'Aosta	11314	40858	21395	124352	<0.001	↗	2107	3261	1080	1608	<0.001	↗	458	322	205	147	<0.001	↘	95.5	109	15.9	18.3	<0.001	↘
Veneto	4765	44728	23833	150046	<0.001	↗	874	1436	1006	965	0.28	↔	182	178	168	107	<0.001	↘	18.1	40.0	19.1	18.9	0.40	↔

Note: P-values are related to the temporal trend; T indicates the trend. Significant increasing trend: ↗; no significant trend: ↔; significant decreasing trend: ↘.



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