

Monitoring Belgian COVID-19 infections in work sectors in 2022

Geert Molenberghs^{1,2}, Johan Verbeeck¹, Godelieve Vandersmissen³, and Lode Godderis^{3,4}

¹Data Science Institute, I-BioStat, Universiteit Hasselt, Hasselt. Belgium

²I-BioStat, KU Leuven, Leuven, Belgium

³IDEWE, External Service for Prevention and Protection at Work, Heverlee, Belgium

⁴Centre for Environment and Health, Department of Public Health and Primary Care, KU Leuven, Leuven, Belgium

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1 Introduction

The workplace is among the main activities for a large proportion of the population, and consequently a source of potential infection. Hence, it is often (up to 25%) reported in the contact centre database as one of the collectivities visited by the index case. It is important to monitor the incidence of COVID-19 by sector as it can help us to better understand causes of increased infection rates and it can offer us ways to reduce infections without jeopardising the continuity of these sectors/companies for the benefit of all, first and foremost the companies and their workers. In contrary to previous reports only one source of information on infection in work sectors will be used: the RSZ/ONSS data. Due to changed policy concerning testing and contact tracing in March 2022, insufficient incidence data is available from the IDEWE contact tracing.

1.1 RSZ/ONSS data

The RSZ/ONSS data analyses of COVID-19 infections in the working population were set up in the first place to allow for signal detection. The alerts consist of 2 or more cases in the same company as well as the identification of employment of an index case in a risk sector as defined by the regional contact tracing agencies (daily alerts are sent by the RSZ/ONSS to the regions). Aggregated data show the evolution over time of the incidence in the sectors. It helps to better understand the spread of the virus in the active population. The latter is of interest here.

Data description: RSZ-ONSS has been receiving information regarding positive COVID-19 cases from Sciensano since 8 September 2020. RSZ-ONSS links this information to workplace-related databases, at the level of the national number (NISS). The linkage is allowed during a period of 14 days, after which the information on positive cases is destroyed, while the aggregated output tables are stored. Linkage is done of positive cases with the NSSO Dimona database of active workers since 8 September 2020. This covers most of the workers, such as private and public sectors, interim employment and job students. Since 12 January 2021, additional linkage of positive cases with the ARZA-RGTI (Algemeen Repertorium van de Zelfstandige Arbeiders - Répertoire Général des Travailleurs Indépendants) database was allowed, which covers self-employed workers.

Each company is classified by sector of its main activity (as attributed by the RSZ-ONSS), which are identified by the NACE code. This standard code classifies workplaces into 21 main sectors and then in subcategories for which the specificity depends on the chosen granularity (which can have up to 943 subcategories). However, although some companies or self-employed workers may be active in more than one sector, only one NACE number associated with the main activity is used in the analysis. This limitation is particularly important to consider for employees within national education. Because a vast majority of schools provide both primary and secondary education, the employees will be registered as working in “Secondary education” even when in reality they are primary school teachers.

Further, since the link of the cases is only identified at the level of the company, no information is available on the type of the job of the index case (e.g., administrative work in metal industry will be registered under metal industry). Further, information on the exact employment location is not always available and/or accurate (e.g., information on telework or temporary unemployment is not available).

Finally, the actual source of infection (in particular: at the workplace or elsewhere) cannot be traced back from this database. Thus, the size and extent of the database allows us to obtain a clear and precise picture of the level of infection within a given sector, without link to the source and circumstances of infection.

2 Methodology

2.1 COVID-19 14-day incidence

The data provided by RSZ/ONSS will be shown per work sector. Work sectors are divided by NACE codes and grouped into 5 levels of detail, going from 21 sectors at level 1 to 943 sectors at level 5. The evolution of the 14-day incidence of positive COVID-19 cases among all employees registered in the same sector (number of cases per 100,000 employees) is presented for the 5 levels of work sectors. A 95% confidence interval (CI)

for the incidence is calculated on a logit transformation of the incidence, after which it is backtransformed to the original scale.

At each of the 5 levels of detail of the work sectors, the highest incidences in the last 14-day period are selected (22 March – 4 April 2022) and presented together with the COVID-19 14-day incidence over all work sectors (~ 4.5 million individuals) and the COVID-19 14-day incidence in the general population (~ 11.5 million individuals) for reference.

Because the number of employees in some occupational sectors is low compared to others, the precision of the 14-day incidence is low in such small sectors. Therefore, we select the highest incidences for level 1 sectors with a minimum of 10,000 employees and self-employed workers. For level 2 and 3 sectors with a minimum of 5,000 employees and self-employed workers are selected, while for level 4 and level 5, sectors with a minimum of 3,000 and 1,500 employees, respectively, are selected.

Note that for 25% of the self-employed a sector is missing in the ARZA-RGTI data. Positive cases of self-employed worker with missing sector information are left out of the analysis. Linkage to occupational data shows that missing sector information is dispersed over many sectors, so that the impact of missing data is not affecting a single sector excessively. There will be a slight underestimation of the true incidence, but the ordering among sectors is likely not affected.

Finally, we cannot exclude varying testing preparedness and custom between sectors.

3 Results

This report is accompanied with an Excel sheet, listing all sectors and all NACE-BEL sectors for further examination.

3.1 Level 1 work sector

Of the 20 sectors at level 1, the sector with a 14-day incidence on 4 April 2022 significantly above the working population average is Human health and social work activities (sector Q) (Table 1 and Figure 1). The increase in 14-day incidences is leveling off in all sectors.

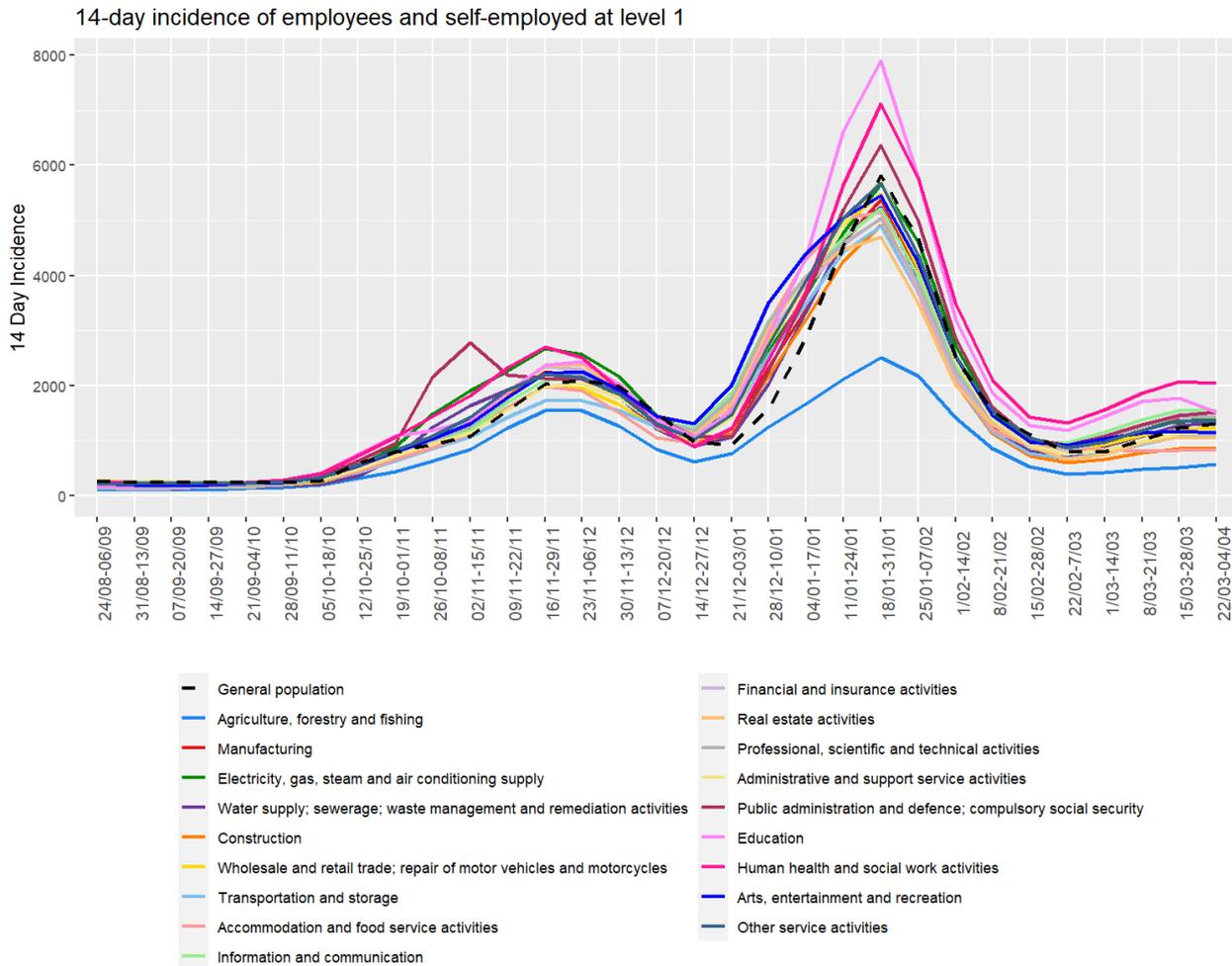


Figure 1: 14-Day incidence of COVID-19 infection of 20 sectors at Level 1 in both employees and self-employed workers

Table 1: 14-Day incidence of COVID-19 infection of 20 sectors at Level 1 on 4 April 2022

DESCRIPTION	NACE-code	Total number of workers	Incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
Human health and social work activities	Q	657743	2047(2013;2082)	2091(2055;2127)	1551(1450;1659)	8.36
Working population		4646374	1572(1561;1583)	1572(1561;1583)		
Information and communication	J	185733	1542(1487;1599)	1648(1581;1718)	1285(1194;1383)	29.87
Financial and insurance activities	K	159685	1523(1464;1584)	1646(1577;1718)	1089(986;1203)	22.23
Education	P	759408	1520(1493;1548)	1527(1499;1555)		3.56
Public administration and defence; compulsory social security	O	595836	1513(1482;1544)	1512(1481;1543)	1322(1191;1468)	0.18
Electricity, gas, steam and air conditioning supply	D	21409	1434(1283;1602)	1468(1311;1644)		6.18
Professional, scientific and technical activities	M	396439	1432(1395;1469)	1670(1616;1726)	1160(1112;1210)	47.39
Manufacturing	C	623331	1423(1394;1453)	1478(1447;1510)	942(870;1020)	10.42
Other service activities	S	160412	1359(1303;1417)	1488(1407;1573)	1223(1148;1302)	49.59
Water supply; sewerage; waste management and remediation activities	E	36145	1328(1215;1451)	1374(1255;1504)		6.56
Wholesale and retail trade; repair of motor vehicles and motorcycles	G	835471	1232(1209;1256)	1352(1324;1380)	818(778;860)	22.91
Arts, entertainment and recreation	R	109930	1148(1087;1213)	1156(1079;1238)	1135(1036;1244)	36.85
Administrative and support service activities	N	443772	1140(1109;1172)	1180(1145;1216)	954(889;1024)	18.26
Transportation and storage	H	309683	1105(1069;1142)	1155(1116;1195)	607(523;704)	9.32
Real estate activities	L	58729	1054(975;1140)	1183(1056;1325)	959(860;1069)	58.34
General population			1313	1313	1313	
Construction	F	383372	860(831;890)	996(956;1037)	655(616;697)	40.82
Accommodation and food service activities	I	328623	835(804;867)	866(831;903)	724(664;789)	22.44
Agriculture, forestry and fishing	A	82837	571(522;625)	473(402;557)	628(564;699)	63.94

3.2 Level 2 work sector

In the sectors at level 2 with a minimum of 5,000 workers, the sectors with a 14-day incidence on 4 April 2022 higher than the general population average are: Health and care sector (sector 86, 87), Manufacturing (sector 24, 20, 22, 29, 21), Scientific research and development (sector 72) and Social work activities without accommodation (sector 88) (Table 2 and Figure 2).

14-Days incidence at Level 2 Employees and Self-employed

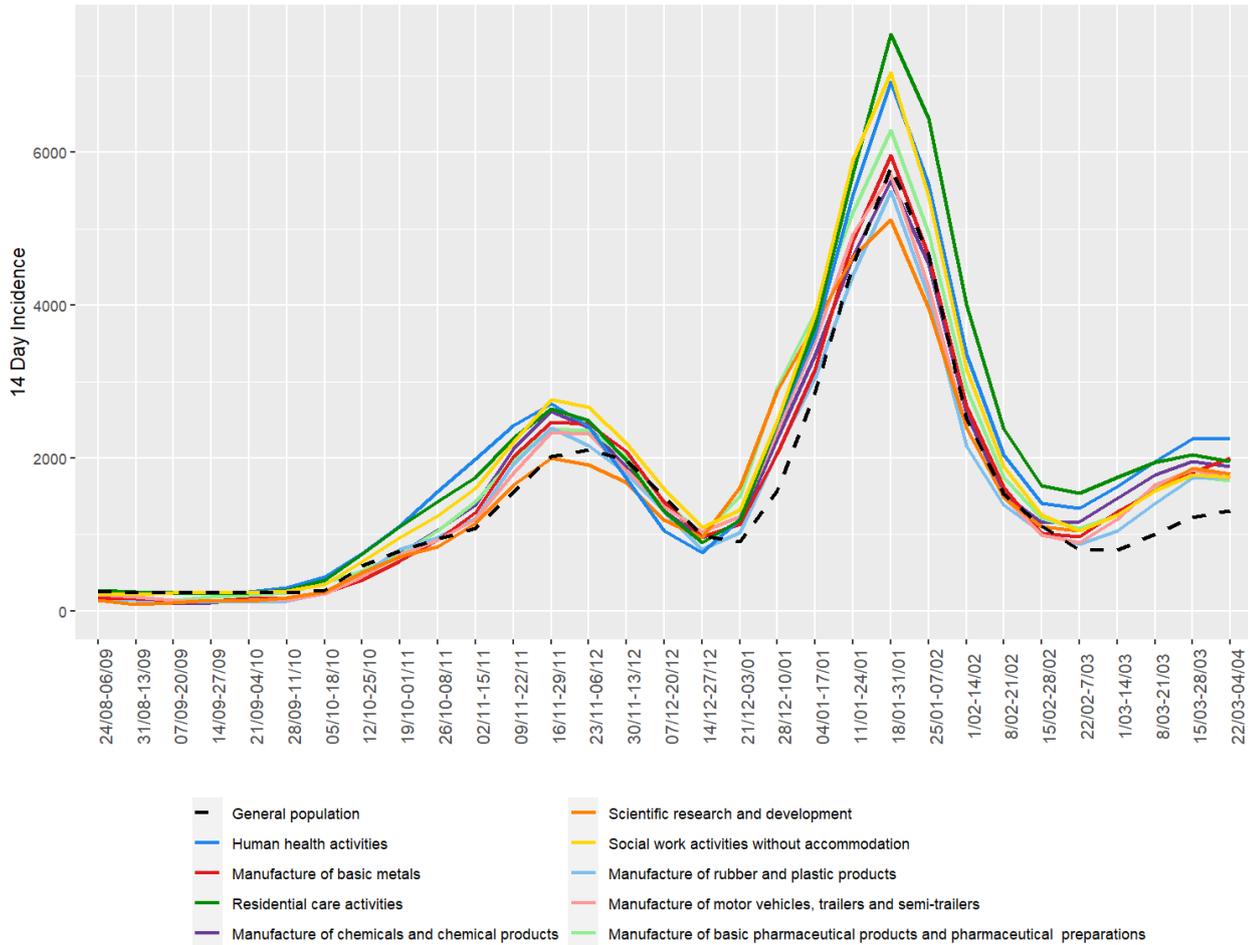


Figure 2: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 2 in both employees and self-employed workers

Table 2: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 2 on 4 April 2022

DESCRIPTION	NACE-code	Total number of workers	Incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
Human health activities	86	316032	2258(2207;2310)	2381(2324;2439)	1558(1450;1674)	15.23
Manufacture of basic metals	24	25739	1997(1833;2175)	2018(1851;2200)		2.96
Residential care activities	87	173258	1952(1888;2018)	1955(1890;2022)	1694(1240;2310)	1.35
Manufacture of chemicals and chemical products	20	47808	1893(1775;2019)	1898(1778;2026)		2.78
Scientific research and development	72	29192	1795(1649;1954)	1853(1698;2022)	1155(799;1668)	8.31
Social work activities without accommodation	88	169766	1753(1692;1817)	1757(1695;1822)	1640(1334;2014)	3.21
Manufacture of rubber and plastic products	22	26925	1753(1603;1917)	1799(1643;1970)		5.25
Manufacture of motor vehicles, trailers and semi-trailers	29	36014	1741(1611;1881)	1761(1629;1904)		2.07
Manufacture of basic pharmaceutical products and pharmaceutical preparations	21	35556	1710(1580;1850)	1730(1599;1872)		1.31
Working population		4646374	1572(1561;1583)	1572(1561;1583)		
General population			1313	1313	1313	

3.3 Level 3 work sector

In the sectors at level 3 with a minimum of 5,000 workers, the sectors with a 14-day incidence on 4 April 2022 significantly higher than the working population average are: Manufacturing sectors (sector 244, 291, 201, 212, 241, 205, 222, 212), Hospital activities (sector 861), Residential care activities (sector 871, 872, 879), Activities of trade unions (sector 942), Social work without accommodation (sector 881, 889), Other human health activities (sector 869), Publishing of books (sector 581), Technical testing and analysis (sector 712), Research and experimental development on natural sciences and engineering (sector 721), Monetary intermediation (sector 641) and Provision of services to the community (sector 842) and (Table 3 and Figure 3).

The last 4 weeks the incidences in education is plateauing or decreasing (Figure 4). A comparison between primary and secondary schools is inaccurate based on the available data. Indeed, the NACE-BEL code for school employees is assigned to the main activity of the school. Hence, for schools offering both primary and secondary education, all employees are counted as secondary education employees. Employees under the

NACE-BEL code primary education are employees in schools that offer only primary education.

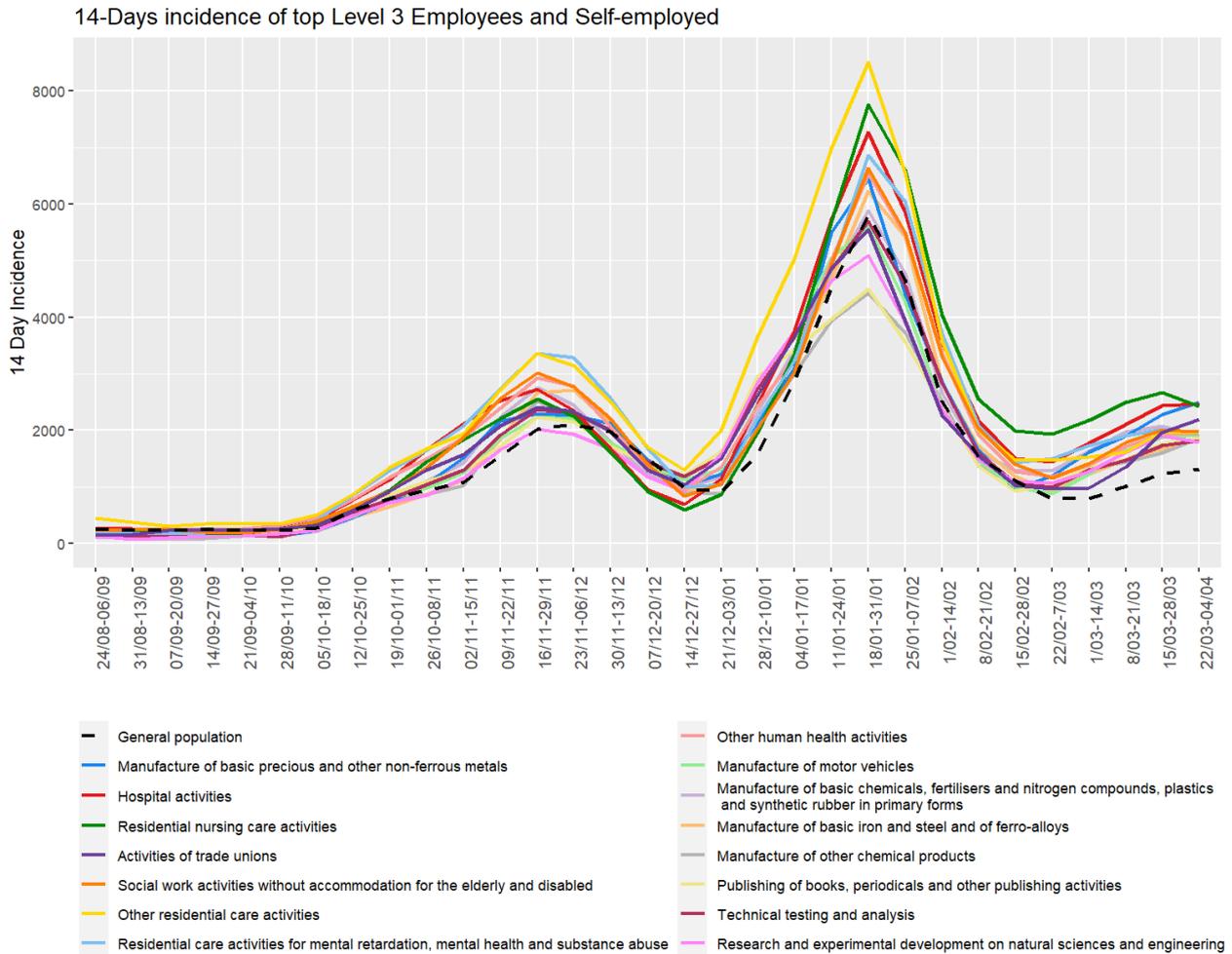


Figure 3: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 3 in both employees and self-employed

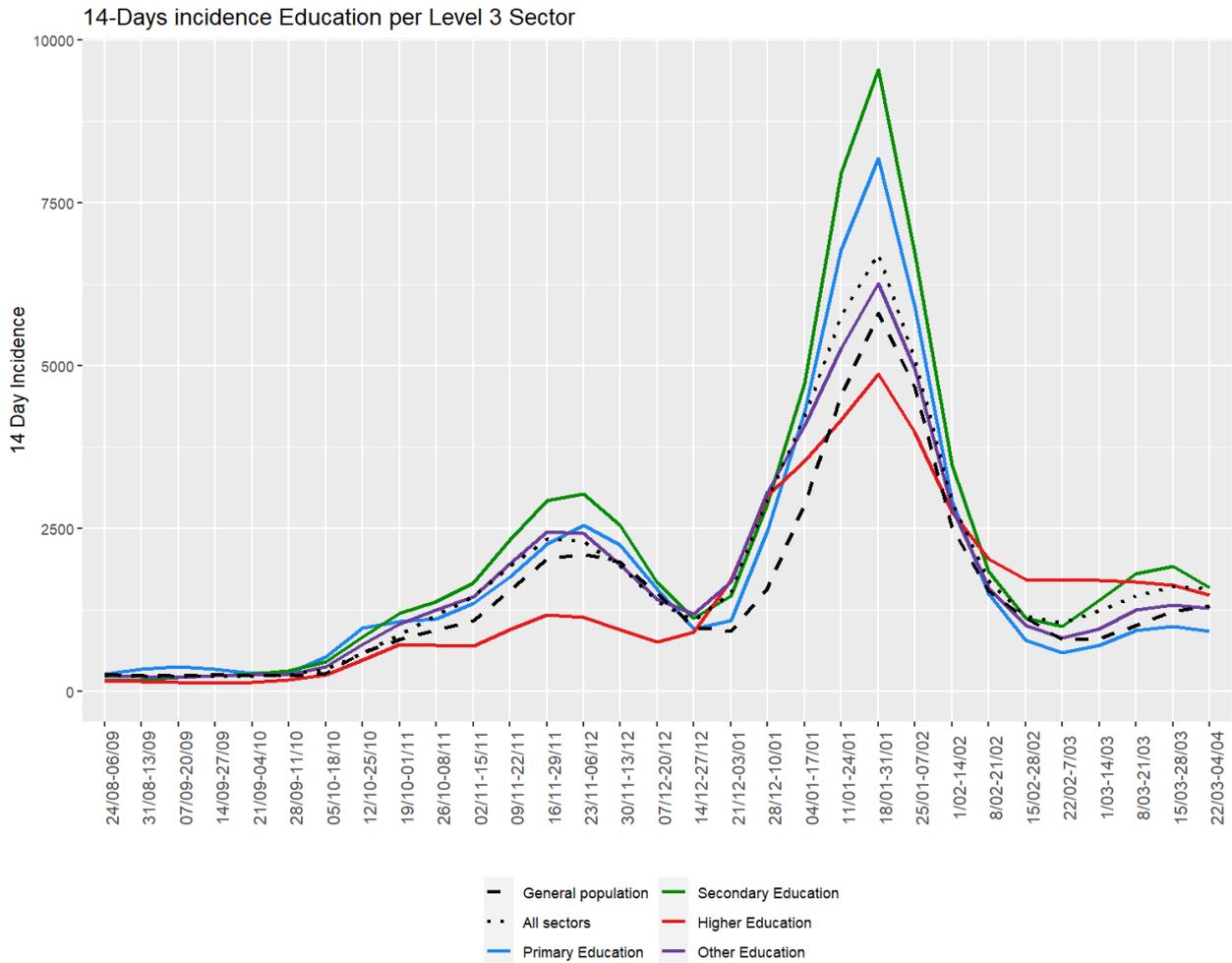


Figure 4: 14-Day incidence of COVID-19 infection in Education sectors at Level 3 in both employees and self-employed

Table 3: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 3 on 4 April 2022

DESCRIPTION	NACE-code	Total number of workers	Incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
Manufacture of basic precious and other non-ferrous metals	244	8760	2500(2193;2849)	2506(2196;2859)		2.07
Hospital activities	861	216437	2464(2400;2530)	2465(2400;2531)		0.33
Residential nursing care activities	871	45574	2429(2292;2574)	2431(2293;2577)		0.88
Activities of trade unions	942	5864	2200(1854;2608)	2224(1872;2640)		2.60
Social work activities without accommodation for the elderly and disabled	881	48915	1981(1861;2108)	1978(1858;2106)		1.09
Other residential care activities	879	16497	1970(1769;2194)	2004(1797;2234)		3.52
Residential care activities for mental retardation, mental health and substance abuse	872	42740	1956(1829;2092)	1953(1825;2090)		1.77
Other human health activities	869	54574	1935(1823;2054)	2319(2152;2499)	1502(1360;1658)	47.39
Manufacture of motor vehicles	291	20491	1913(1734;2110)	1921(1741;2119)		0.66
Manufacture of basic chemicals, fertilisers and nitrogen compounds, plastics and synthetic rubber in primary forms	201	29371	1893(1743;2055)	1906(1755;2070)		1.56
Manufacture of basic iron and steel and of ferro-alloys	241	12274	1882(1656;2138)	1888(1659;2147)		2.05
Manufacture of other chemical products	205	7124	1867(1577;2209)	1890(1594;2240)		3.44
Publishing of books, periodicals and other publishing activities	581	9076	1862(1603;2161)	1901(1598;2261)	1760(1312;2357)	27.61
Technical testing and analysis	712	18712	1817(1635;2019)	1907(1711;2125)	983(620;1555)	9.81
Research and experimental development on natural sciences and engineering	721	27933	1790(1641;1952)	1853(1696;2025)	1005(656;1536)	7.48
Manufacture of plastics products	222	24124	1741(1583;1914)	1782(1618;1962)	1013(589;1737)	5.31
Manufacture of pharmaceutical preparations	212	33488	1723(1589;1868)	1736(1601;1882)		0.94
Monetary intermediation	641	49147	1699(1588;1817)	1698(1587;1817)		1.25
Provision of services to the community as a whole	842	137968	1683(1616;1752)	1680(1613;1749)		0.11
Other social work activities without accommodation	889	121024	1660(1590;1734)	1664(1592;1739)	1565(1257;1947)	4.18
Working population		4646374	1572(1561;1583)	1572(1561;1583)		
General population			1313	1313	1313	

3.4 Level 4 work sector

In the sectors at level 4 with a minimum of 3,000 workers, the sectors with a 14-day incidence on 4 April 2022 significantly higher than the working population average are: Hospital activities (sector 8610), Residential care (sector 8710, 8720, 8790), Manufacturing activities (sector 2443, 1920, 2014, 2030, 2229, 2016, 2059, 1091, 2910, 2410, 2120), Activities of trade unions (sector 9420), Other human resources provision (sector 7830), Wholesale of chemical products (sector 4675), Social work activities without accommodation (sector 8810), Other human health activities (sector 8690), General Secondary education and higher education (sector 8531,

8542), Child day-care (sector 8891), Fire service, justice and public order and safety activities (sector 8425, 8423, 8424), Service activities incidental to water transportation (sector 5222), General medical practice activities (sector 8621), Other research and experimental development on natural sciences and engineering (sector 7219), Technical testing and analysis (sector 7120) and Other monetary intermediation (sector 6419) (Table 4 Figure 5).

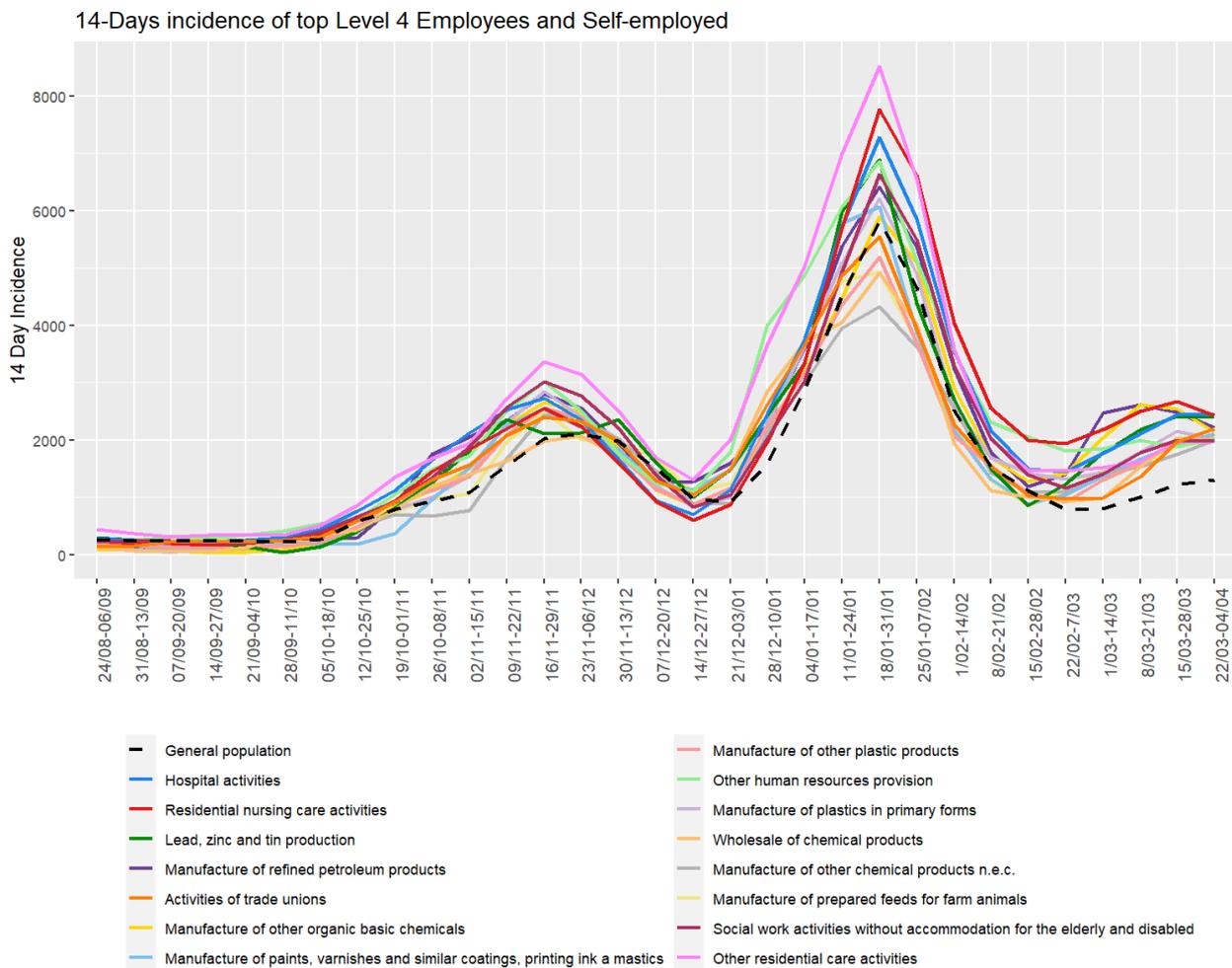


Figure 5: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 4 in both employees and self-employed

Table 4: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 4 on 4 April 2022

DESCRIPTION	NACE-code	Total number of workers	Incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
Hospital activities	8610	216437	2464(2400;2530)	2465(2400;2531)		0.33
Residential nursing care activities	8710	45574	2429(2292;2574)	2431(2293;2577)		0.88
Lead, zinc and tin production	2443	4339	2397(1982;2897)	2390(1974;2891)		0.69
Manufacture of refined petroleum products	1920	3626	2206(1775;2738)	2202(1770;2737)		1.08
Activities of trade unions	9420	5864	2200(1854;2608)	2224(1872;2640)		2.60
Manufacture of other organic basic chemicals	2014	12826	2144(1907;2410)	2152(1913;2420)		1.07
Manufacture of paints, varnishes and similar coatings, printing ink a mastics	2030	3181	2106(1661;2667)	2113(1657;2691)		4.77
Manufacture of other plastic products	2229	9281	2058(1788;2368)	2127(1844;2452)		6.26
Other human resources provision	7830	4745	2023(1659;2465)	2080(1693;2554)		9.77
Manufacture of plastics in primary forms	2016	9141	2013(1744;2322)	2021(1750;2333)		1.43
Wholesale of chemical products	4675	7788	2003(1714;2339)	2053(1746;2412)		9.96
Manufacture of other chemical products n.e.c.	2059	6000	2000(1675;2387)	2046(1712;2443)		3.05
Manufacture of prepared feeds for farm animals	1091	4357	1997(1621;2458)	2018(1628;2499)		6.72
Social work activities without accommodation for the elderly and disabled	8810	48915	1981(1861;2108)	1978(1858;2106)		1.09
Other residential care activities	8790	16497	1970(1769;2194)	2004(1797;2234)		3.52
Residential care activities for mental retardation, mental health and substance abuse	8720	42740	1956(1829;2092)	1953(1825;2090)		1.77
Other human health activities	8690	54574	1935(1823;2054)	2319(2152;2492)	1502(1360;1658)	47.39
Manufacture of motor vehicles	2910	20491	1913(1734;2110)	1921(1741;2119)		0.66
Fire service activities	8425	18819	1913(1727;2119)	1910(1724;2116)		0.12
Service activities incidental to water transportation	5222	5500	1909(1579;2306)	1885(1547;2295)		6.48
Manufacture of basic iron and steel and of ferro-alloys	2410	12274	1882(1656;2138)	1888(1659;2147)		2.05
Justice and judicial activities	8423	27478	1856(1703;2022)	1856(1703;2022)		0.11
General medical practice activities	8621	17144	1849(1658;2062)	1665(1457;1902)	2392(1977;2891)	25.89
Other research and experimental development on natural sciences and engineering	7219	21491	1824(1653;2012)	1873(1694;2070)		6.83
Technical testing and analysis	7120	18712	1817(1635;2019)	1907(1711;2125)	983(620;1555)	9.81
Public order and safety activities	8424	54157	1780(1672;1895)	1776(1668;1891)		0.18
Manufacture of pharmaceutical preparations	2120	33488	1723(1589;1868)	1736(1601;1882)		0.94
Other monetary intermediation	6419	46947	1687(1574;1808)	1686(1573;1807)		1.21
General secondary education	8531	428520	1655(1617;1694)	1655(1617;1694)		0.15
Working population		4646374	1572(1561;1583)	1572(1561;1583)		
General population			1313	1313	1313	

3.5 Level 5 work sector

In the sectors at level 5 with a minimum of 3,000 workers, the sectors with a 14-day incidence on 4 April 2022 significantly higher than the working population average are: Hospitals (sector 86101, 86104, 86103), Activities of medical laboratories (sector 86901), Residential care (sector 87101, 87201, 87901, 87202), Manufacturing activities (sector 24430, 19200, 20140, 20300, 22290, 20160, 20590, 10910, 29100, 24100, 21201), Mental health activities (sector 86904), General secondary education (sector 85319), Activities of trade unions (sector 94200), Nursing activities (sector 86906), Wholesale of chemical products (sector 46751), Other human resources provision (sector 78300), Social services without housing sector (88101, 88999), Fire services, Local police and judicial activities (sector 84242, 84250, 84232), Service activities incidental to water transportation (sector 52220), Agents and brokers in banks (sector 66191), Public Centers for Social Welfare (sector 84115), General medical practice activities (sector 86210), Other research and experimental development on natural sciences and engineering (sector 72190) and Other monetary intermediation (sector 64190) (Table 5 and Figure 6).

14-Days incidence of Health and care sectors at Level 4

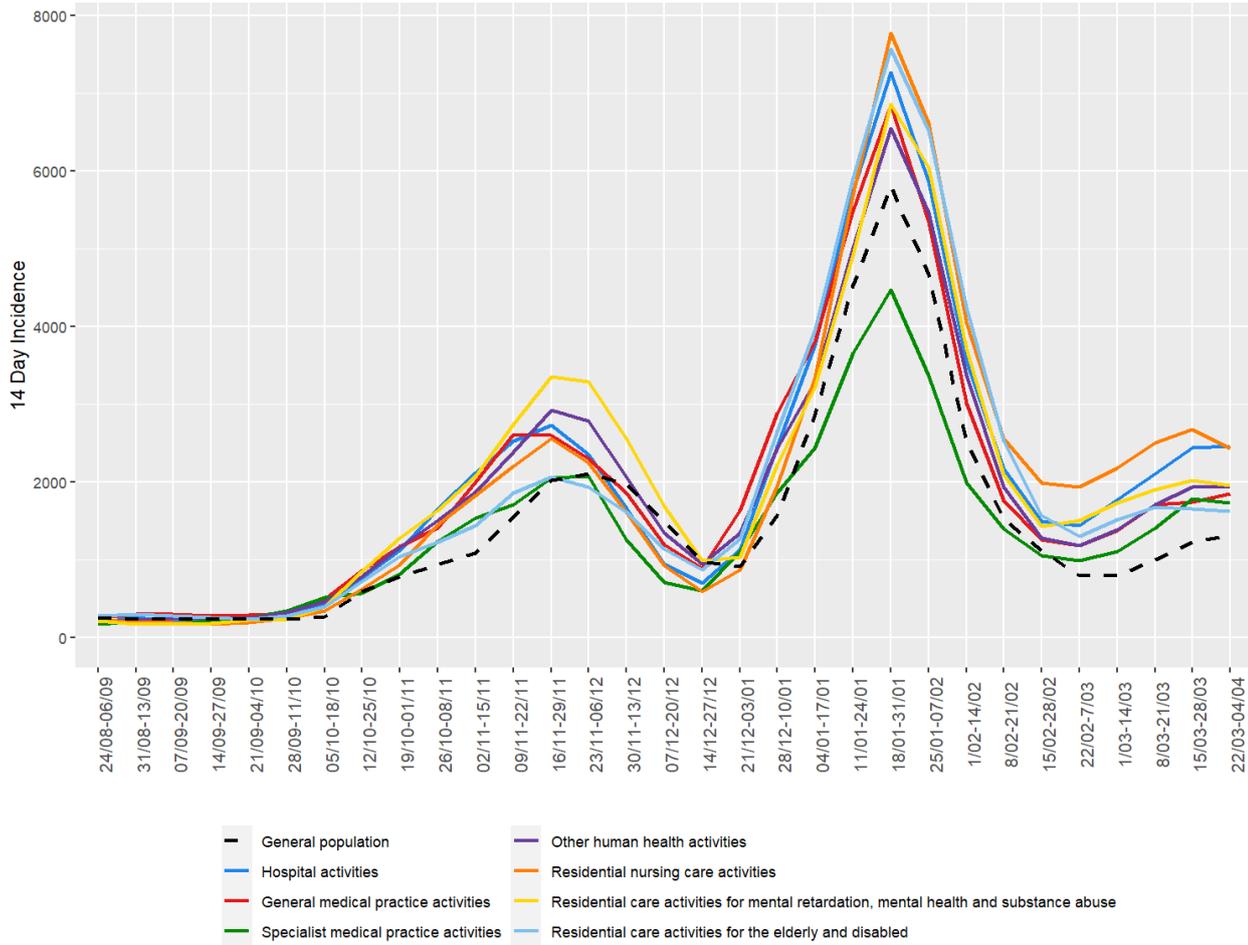


Figure 6: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 5 in both employees and self-employed

Table 5: 14-Day incidence of COVID-19 infection of sectors with the highest incidence at Level 5 on 4 April 2022

DESCRIPTION	NACE-code	Total number of workers	Incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
General hospitals	86101	177867	2485(2414;2558)	2484(2413;2557)		0.26
Activities of medical laboratories	86901	6640	2455(2109;2856)	2603(2227;3041)		10.92
Rest and care homes (R.V.T.)	87101	45533	2429(2292;2574)	2430(2292;2576)		0.84
Lead, zinc and tin production	24430	4339	2397(1982;2897)	2390(1974;2891)		0.69
Psychiatric hospitals	86104	33013	2393(2234;2564)	2393(2233;2564)		0.36
Mental health activities, excluding psychiatric hospitals and care homes	86904	6968	2368(2036;2753)	2491(2013;3079)	2256(1820;2793)	53.22
Regular secondary education	85319	211890	2296(2233;2361)	2296(2233;2361)		0.02
Residential care for minors with a mental disability	87201	8232	2296(1994;2643)	2296(1994;2643)		1.37
Manufacture of refined petroleum products	19200	3626	2206(1775;2738)	2202(1770;2737)		1.08
Activities of trade unions	94200	5864	2200(1854;2608)	2224(1872;2640)		2.60
Manufacture of other organic basic chemicals	20140	12826	2144(1907;2410)	2152(1913;2420)		1.07
Nursing Activities	86906	16557	2126(1917;2357)	2283(2051;2540)	1072(713;1608)	12.96
Integrated youth care with housing	87901	12642	2120(1883;2386)	2133(1892;2404)		2.84
Manufacture of paints, varnishes and similar coatings, printing ink a mastics	20300	3181	2106(1661;2667)	2113(1657;2691)		4.77
Manufacture of other plastic products	22290	9281	2058(1788;2368)	2127(1844;2452)		6.26
Wholesale of chemical products	46751	7097	2029(1726;2384)	2055(1735;2432)		9.50
Specialized hospitals	86103	4644	2024(1656;2471)	2033(1662;2485)		1.50
Other human resources provision	78300	4745	2023(1659;2465)	2080(1693;2554)		9.77
Manufacture of plastics in primary forms	20160	9141	2013(1744;2322)	2021(1750;2333)		1.43
Manufacture of other chemical products n.e.c.	20590	6000	2000(1675;2387)	2046(1712;2443)		3.05
Manufacture of prepared feeds for farm animals	10910	4357	1997(1621;2458)	2018(1628;2499)		6.72
Residential care for adults with a mental disability	87202	29044	1966(1813;2132)	1963(1808;2130)		1.62
Activities of family and elderly care at home	88101	45008	1953(1829;2085)	1954(1830;2087)		0.85
Manufacture of motor vehicles	29100	20491	1913(1734;2110)	1921(1741;2119)		0.66
Fire service activities	84250	18819	1913(1727;2119)	1910(1724;2116)		0.12
Service activities incidental to water transportation	52220	5500	1909(1579;2306)	1885(1547;2295)		6.48
Local Police	84242	36624	1884(1750;2028)	1875(1741;2019)		0.11
Agents and brokers in banks	66191	10828	1884(1644;2158)	2117(1816;2467)	1346(1003;1804)	30.45
Manufacture of basic iron and steel and of ferro-alloys	24100	12274	1882(1656;2138)	1888(1659;2147)		2.05
Judicial activities	84232	26620	1867(1711;2037)	1867(1711;2037)		0.00
Public Centers for Social Welfare (O.C.M.W.)	84115	90792	1857(1771;1947)	1856(1770;1946)		0.15
General medical practice activities	86210	17144	1849(1658;2062)	1665(1457;1902)	2392(1977;2891)	25.89
Other research and experimental development on natural sciences and engineering	72190	21491	1824(1653;2012)	1873(1694;2070)		6.83
Manufacture of pharmaceutical preparations	21201	31675	1749(1610;1899)	1758(1619;1909)		0.68
Other social service activities without accommodation	88999	36516	1728(1599;1867)	1724(1591;1868)	1788(1338;2386)	6.94
Other monetary intermediation	64190	46947	1687(1574;1808)	1686(1573;1807)		1.21
Working population		4646374	1572(1561;1583)	1572(1561;1583)		
General population			1313	1313	1313	

Finally, when considering specifically the non-medical contact professions, we see that the incidence in the employees is close to the incidence in the self-employed. Additionally, the average incidence for both the beauty saloons and hairdressers is similar to the general population average. (Figure 7).

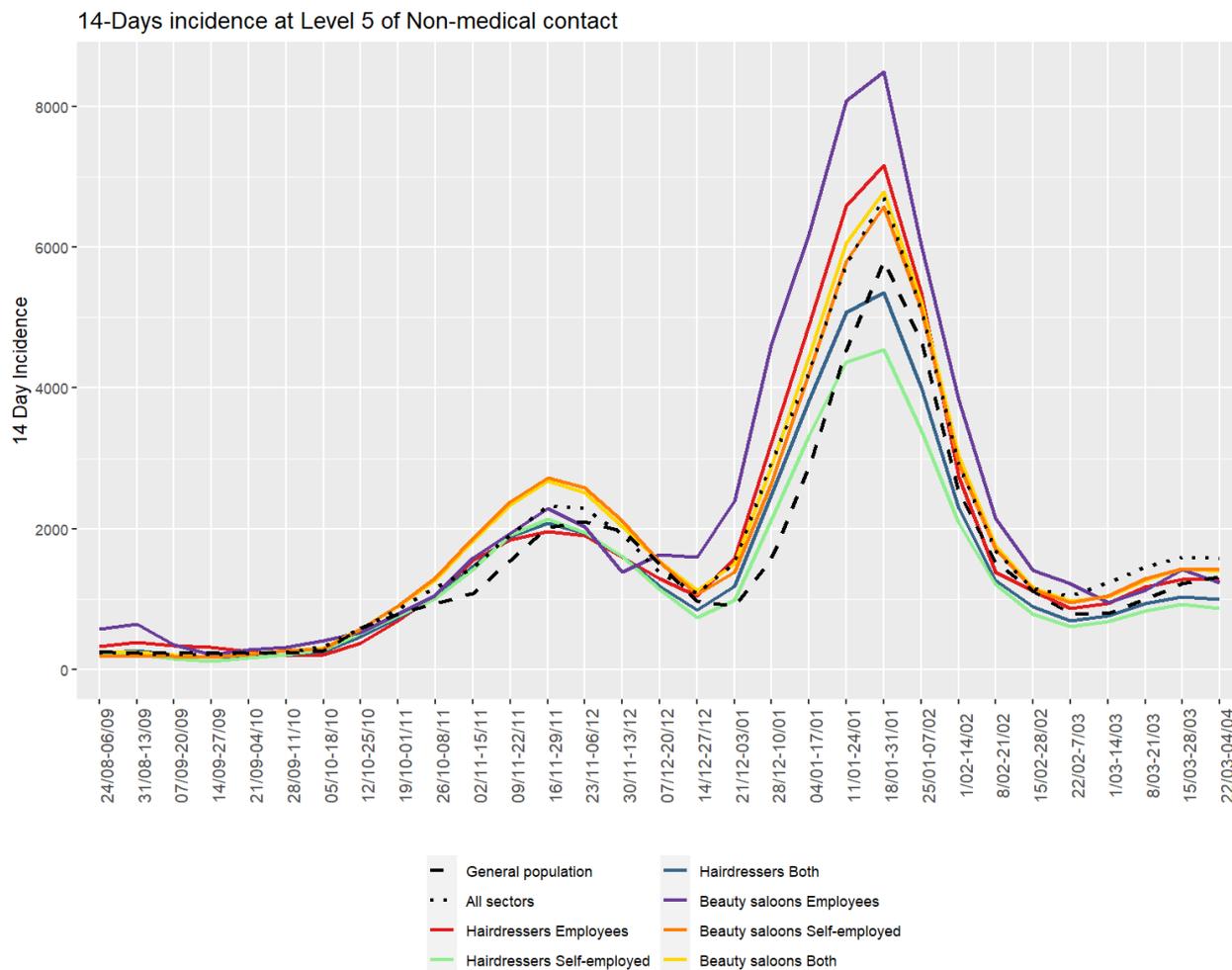


Figure 7: 14-Day incidence of COVID-19 infection at Level 5 of non-medical contact professions.

3.6 Additional analyses

3.6.1 Cross-level overview

When contemplating the 14-day incidences across NACE-BEL sectors, it is possible to gauge the contribution of each sub-level sector to the higher level incidence (Figure 8).

The 14-day incidence in the Human health and social work sector (sector Q) is elevated compared to the working and general population (Figure 8). The increased incidence is broadly present in the sector and is the highest in hospitals general practitioners and residential nursing care.

Although the 14-day incidence in Education (sector P), Public administration and defence (sector O), Administrative and support service activities (sector N), Financial and insurance activities (sector K), Professional scientific and technical activities (sector M), Other service activities (sector S) is around or below the working population average, individual subsectors show an increased incidence compared to the working population, such as Regular general secondary education (sector 85319), Public centres for social welfare (sector 84115), Justice (sector 8423), Public order and safety (sector 8484), Fire service activities (sector 8425), Other human resources provision (sector 7830), Other monetary intermediation (sector 6419), Technical tests and assessments (sector 7120), Other research and development work in the natural sciences (sector 7219), Photographers (sector 7420) and Activities of trade unions (sector 9420).

It is encouraging that the incidence in Arts, entertainment and recreation (sector R), Accommodation and food service activities (sector I) and Transportation and storage (sector H) is similar to or below the general population average.

The sectors Manufacturing (sector C) and Wholesale and retail trade (sector G) are sectors with the highest number of sublevels. This results in large differences in 14-day incidences within the sector. While the number of manufacturing sectors with an incidence well above the working population average is further increasing, the incidences in the whole and retail sectors is below or close to the working and population average, except for the wholesale of chemical products, which shows an increased incidence compared to the working population average (Figure 8).

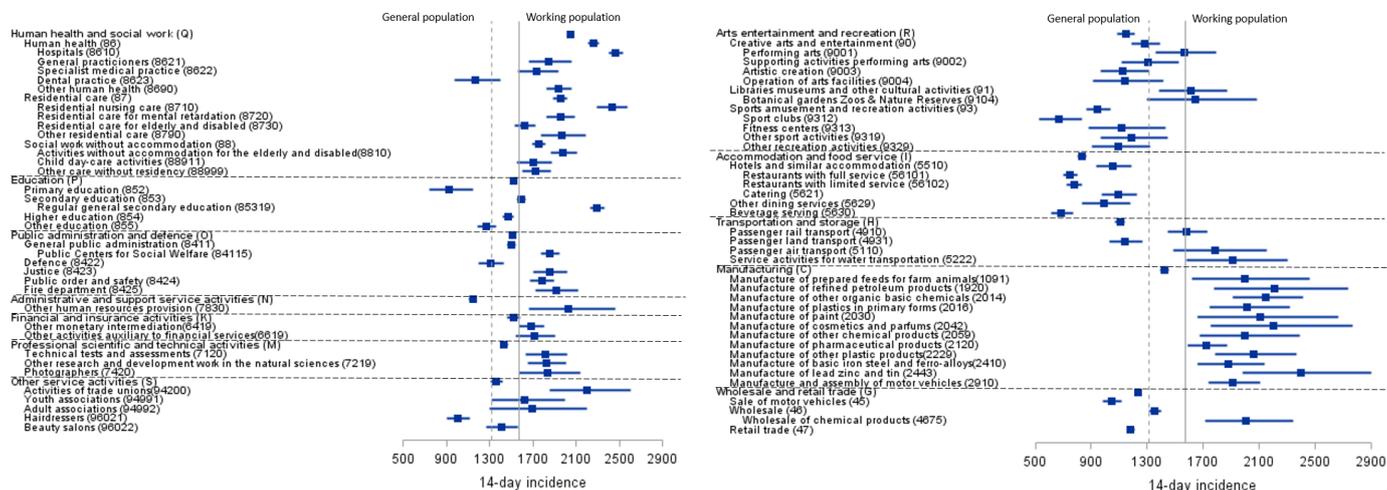


Figure 8: Forest plot of 14-Day incidence and 95% CI of selected sectors on 4 April 2022 in both employees and self-employed.

4 Conclusion

Despite the limitations of the data, the RSZ/ONSS data demonstrates a levelling off of the increase in the 14-day COVID-19 incidences in all sectors. The highest incidences are present in hospitals, residential care and manufacturing. The average incidence in the working population is 20% higher than the average incidence in the general population, suggesting that infections are more among adults than children and the elderly. Although the changed testing procedure in schools and the general population may influence this comparison. Vigilance is required in especially human health, social work and manufacturing sectors since they're not able to telework.

Although no conclusions can be drawn regarding the location of infection (workplace or elsewhere) nor the location of employment (at work, telework, or temporarily unemployed) of the employees in the RSZ/ONSS data, the contact tracing in the segments under surveillance by IDEWE showed that in the index cases, where this information was available, 7% indicated that the workplace was certainly the source of infection. Due to changed testing policy in March 2022, insufficient data is available from the contact tracing to provide accurate results.

It is important to carefully monitor the incidence of COVID-19 in all sectors, especially sectors with frequent high risk contacts with a sharp increase in incidence in the last 2 weeks. Several manufacturing sectors, Human health activities, Residential care, secondary education, Justice, Public order and safety, Fire service activities, Other human resources Provision and activities of trade unions, all show a sharp increase in incidences compared to the general population average and continue to require careful attention.

For some sectors the reason for the higher incidences is not immediately obvious, such as Wholesale of chemical products, Other monetary intermediation, Technical tests and assessments, Other research and experimental development on natural sciences and engineering, photographers and service activities for water transportation. It would be worthwhile to evaluate the hygiene protocols and its practice in these sectors.

The incidence in non-medical contact professionals is comparable to the general population average, with no obvious difference between employees and self-employed professionals, nor between beauty salons and hair-

dressers.

It is encouraging to note that employees in accommodation and food services, transportation, arts entertainment and recreation and most wholesale and retail sectors are well protected, as they are often not able to telework. It is worrisome that several manufacturing sectors show an increase in incidence among employees.

Finally, despite the high degree of vaccination, COVID-19 infection remains possible. Continuous monitoring of breakthrough infections, despite primo and booster vaccination, and especially protection against hospitalization, is warranted.

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