

**Adviesaanvraag**

Vraagsteller	Regeringscommissariaat Corona
Datum van adviesaanvraag	02/09/2021
Onderwerp	Maskers en andere NPI
Vraag	Kan een update gegeven worden over de adviezen m.b.t. de beheerstrategie met focus op maskerdracht?

Adviesverstrekking t.a.v. het Overlegcomité

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Executive summary

This advice builds further on the [GEMIS\(+\)-advice 'Autumn-winter' dd. 30/6/2021](#), ['Recommendations NPIs OCC 21.08.2017' dd. 17/08/2021](#) and ['the extension of the CST/DCC and on ways to increase vaccination coverage in low coverage areas in Belgium' dd. 18/08/2021](#). We kindly refer to this earlier advice for general concepts and recommendations.

1. Epidemiological situation. The epidemiological evolution [in Brussels in the past weeks](#) showcases the high residual risk in settings with low vaccination coverage, with an actual COVID-19 [ICU-load of 26% in Brussels, and 11% in Belgium overall \(dd. 10/09/2021\)](#). The Brussels 14-day incidence is 579, making it the 8th highest among the 211 ECDC regions in week 2021/35. hospital surge phase 1A, meaning that all hospitals have to reserve 25% of ICU beds for COVID-19 patients. As a result, certain care activities have to be postponed, increasing the backlog of patient interventions/treatments and hence increasing the risk of more severe pathologies. This is also impacting further on workload, resilience and motivation of health care workers, especially in hospitals. We expect for the upcoming weeks a further increase of SARS-CoV-2-infections due to the change of season, increased mobility and decrease of teleworking, restart of the school and academic year and societal relaxations, with associated pressure building in primary care, as well as a higher hospital load. The expected rise in other respiratory viral infections, which were mainly absent in the past 18 months due to strong NPIs, further add to these pressures on the health care capacity.
2. Although Belgium has reached a high vaccination coverage (in particular in Flanders, with a moderately high vaccination rate in Wallonia and still too low rate in Brussels), mid-long term projections suggest that **abandoning or further relaxing measures (NPIs) might induce a new wave in cases and hospitalisations** over the period September-November. This is because:
 - a. Vaccination coverage is not high enough yet in all regions, communes, and age ranges.
 - b. The effectiveness of complete vaccination against infection and severe disease is less than 100%. In addition, the duration of the protective effect is also unknown. This means a certain proportion of vulnerable persons can still become severely ill after exposure to the virus. Chances of exposure in older persons are higher now than in the previous year, because they adapt their contact behaviour less now that they are vaccinated, while the virus circulates intensively.
 - c. Expected higher viral transmission during autumn/winter season.
 - d. Suboptimal ventilation conditions in many indoor settings.
 - e. Higher rates of transmission associated with delta as compared to alpha, and even twice as high when compared with the 2020 wildtype (which remained dominant in Belgium until February 2021).
 - f. Contact behaviour is increasing due to fewer restrictions in society (reopening of schools, less structural telework, night clubs reopen...) and lower motivation to follow measures.
 - g. Similar concerns have been raised over summer by WHO, ECDC, CDC and expert groups from other countries, with repeated advice to remain cautious and maintain a basic set of measures.
3. To safeguard public health with a minimal societal impact of measures, a solid **risk management** approach (see also past advice from the COVID-19 Commissariat) **keeping a basic set of NPIs** such as ventilation, masks, distance, and testing/quarantine in specific settings is needed **throughout the upcoming autumn and winter**.
 - a. Viral transmission risk reduction needs to be seen as a **'Swiss cheese model'**, with several layers of imperfect measures leading to reasonable protection. Likewise, removal of one



- or several layers of protection requires compensation by adding other measures to reduce risks. For instance, in places where ventilation and distance cannot be guaranteed, mask wearing, CST or frequent testing could help to compensate for risks.
- b. However, given the airborne nature of COVID-19, **improved ventilation should remain a priority in indoor settings**. In addition, knowing that ventilation improvements may remain insufficient, the use of masks might still be one of the most important NPIs in specific settings throughout the upcoming autumn and winter.
 - c. **Mask wearing** remains crucial for essential indoor activities where vaccinated and unvaccinated might meet (e.g. public transport, grocery store, bakery, pharmacy, banking, care setting, workflow,...) to reduce overall viral circulation and in particular for immunocompromised people.
 - d. The GEMS recommends as a general rule to always wear a **mask in indoor settings when mixing with people of whom you don't know the vaccination/immunisation/testing status as well as in very high density outdoor settings**.
 - e. Large scale indoor gatherings (education, culture, events, religion, horeca) require strict conditions on **ventilation**. Additionally, **masks** (where and whenever possible) **and reduced densities** could help mitigate the transmission risk. The GEMS is not in favour of settings where no ventilation nor masks can be installed, but vouch for the application of sufficient other mitigating factors if these activities are nevertheless taking place (use of CST, density reduction...).
 - f. Testing, contact tracing, quarantine and isolation need to be maintained, enforced and logistically supported. For the specific context of schools, a balance needs to be sought between accurate epidemiological monitoring and outbreak containment versus child and family wellbeing. A new communication towards grandparents and vulnerable family members on their remaining risks is needed.
4. Motivation/public support. Recent data show that the **majority of vaccinated people is still motivated to respect a set of measures**, in contrast with unvaccinated people. Investments in clear communication on the overall strategy, the positive impact of vaccination and the role/limitations of new interventions such as CST is urgently needed.
 5. A solid risk management approach requires a **contingency plan** to be available in case the situation worsens, in order to take effective actions in a timely manner whenever necessary. We advocate for further developing such a plan in the coming weeks proposing measures such as: reinforcing compulsory telework, mask-wearing in schools, broadening the use of the CST in high-risk settings with few mitigating factors, compulsory vaccination in high risk sectors in order to protect people from developing severe COVID-19, frequent and low-threshold testing... This contingency plan should be activated when necessary, based on the [criteria defined by the RAG](#) and should assess whether measures make sense on a national, regional, provincial or local level.
 6. To support the current risk management approach, the **advisory and operational bodies** closely involved into risk assessment and management strategy of the pandemic should remain available at least over the winter. In addition, supporting **tools and information sources** (such as the national info-corona website to streamline communication) should continue to exist during the coming months. Ideally, an optimisation exercise is carried out to identify which bodies (and their tasks), tools, and information sources could be retained in the future and how these should be embedded.



1. Epidemiological situation is still worrisome in Belgium

1.1. Incidence and positivity ratio

The national 14-day-incidence (per 100k inhabitants) has been fluctuating around 240 for a while (241 on 11 September 2021), but there is a clear difference between regions:

- The Brussels incidence equals 581, and keeps increasing. Incidences are highest in the northern part of the region, with some towns having values between 700 and 800.
- The Flemish incidence is 175 (slightly decreasing trend). All Flemish provinces currently show a declining incidence trend.
- The Walloon incidence is 233 (slightly increasing trend). All Walloon provinces, except Brabant Wallon, exhibit an increase.

Incidence should be interpreted against the background of the positivity ratio, which nationally equals 5.4%. There are important provincial differences, ranging from 9.8% in Province Liege and 3.5% in West-Vlaanderen (the latter province also has the lowest incidence among all provinces). There are also important age differences: a worrisome 12.7% in the 0-9 years group, 6.5% in 10-19 years, and then slightly above 5% in the 20-64 age band. In the 65+ population, positivity is lower, with 3.2%.

Note that in a country like Denmark, with an otherwise comparable incidence, the positivity rate is ten times lower than in Belgium. Especially the high positivity in the primary school age is of concern. This has also been observed in the Netherlands, where the compulsory school system has opened earlier than in Belgium. RIVM in the Netherlands refers to the fact that tens of classes have been quarantined. In the primary school age in the Netherlands, incidence has risen by 56% over the course of one week.

Incidence data from ONSS/RSZ

Both the IDEWE contact tracing and the NSSO/ONSS data (see annex 1) show that the increase in 14-day COVID-19 incidences slowed down in July 2021. The incidence in the working population converges back to the incidence in the general population at the end of the summer vacations.

However, with increased circulation of the delta variant of SARS-CoV-2, it is important to carefully monitor the incidence of COVID-19 in industries with multiple people in close proximity to each other, especially among younger and vulnerable individuals who have not yet been vaccinated, and who cannot telecommute. Passenger land transport, youth work clubs, and day care centers, for example, all show steeper increases in incidence rates. Also, administrative and support service activities, private security, cleaning, call centers, and motor vehicle sales and manufacturing show steeper increases in incidence. The contact tracing also shows the highest incidences in the industry and cleaning segment and that the incidence pattern is highest in the Walloon region. It is worthwhile to work with the sectors and committees for prevention and protection at work to evaluate hygiene protocols and practice in these sectors and companies.

Another concern is that 14-day incidences in health and care workers are no longer well below the average for the general population, despite high vaccination coverage. It is possible that this increase can be partially explained by the fact that COVID-19 infection remains possible despite being fully vaccinated, and that efficacy against infection wanes over time (note that healthcare workers were among the earliest vaccine recipients in Belgium, so any effect of waning is likely to be earlier observed among them).

Illustrative for this is also the contact tracing data in the general working population, which shows that 28% of fully vaccinated workers during an outbreak at the workplace had a positive PCR test. This is to be expected as the vaccination coverage increases in the working population, but on the other hand also



should make us aware that mouth masks are still recommended at the workplace where people are working closely together.

Consequently, vigilance is still required in those sectors where telecommuting is not possible, where workers are often exposed to close physical proximity and where climatic conditions favour the transmission of the virus. We therefore call for actions in sectors and companies where the incidence was higher than average to make additional efforts. Furthermore, we advocate that the enforceable nature of the Generic Guide (as of 1/11), when the MB is discontinued, be maintained.

1.2. Hospitalisations: profile, evolution

The surveillance data are not exhaustive and might not reflect all hospital patients (especially underrepresented in Brussels). However, despite the limitations¹, the data allow follow-up of trends and changes over time. From July 2021 onwards, half of the hospitalised patients are younger than 60 years old (median age 50), not fully vaccinated, and without any underlying comorbidities. When looking at the profile of hospitalised patients with a symptomatic breakthrough infection, compared to non-vaccinated patients, they are older (median age 80 vs 62) and more often from a nursing home (34% vs 3.1%).

The positive impact of vaccination is confirmed by different data sources. On 5 September 2021, the incidence of infections was 254/100k among unvaccinated people compared to 49/100k among fully immunised people. The infection incidence between 30 August 2021 to 5 September 2021 was thus 80% lower for fully immunised subjects compared to unvaccinated people. The number of hospitalisations per infection decreased from 8/100 before the start of the vaccination campaign at the end of December, to less than 4/100 at the end of August, and the rate of number of deaths per infection decreased from 4/100 to 0.2/100. Additionally, an analysis of Belgian data from contact tracing January-June 2021 showed that the risk of infection was reduced with 90% after high-risk contact between vaccinated individuals, as compared to contacts between unvaccinated persons².

The evolution of hospitalisations [in Brussels in the past weeks](#) showcases the high residual risk in settings with low vaccination coverage, with an actual COVID-19 [ICU-load of 26% in Brussels, and 11% in Belgium overall \(dd. 10/09/2021\)](#). The Brussels 14-day incidence is 579, making it the 8th highest among the 211 ECDC regions in week 2021/35. Belgian hospitals announced moving to phase 1A, meaning that all hospitals have to reserve 25% of ICU beds for COVID-19 patients, partly because they will need to take in patients from hospitals that are overloaded. As a result, certain care activities have to be postponed, increasing the backlog of patient interventions/treatments and hence increasing the risk of more severe pathologies. This is also impacting further on workload, resilience and motivation of health care workers, especially in hospitals (see also sections below). The expected rise in other respiratory viral infections, which were mainly absent in the past 18 months due to strong NPIs, further add to these pressures on the health care capacity.

¹ Data on the profile of hospitalised patients is collected through the Clinical Hospital surveillance, based on a voluntary participation of hospitals. This means data are not exhaustive, and in a context of decreased participation rates in recent weeks, might not be representative of all the hospitalised patients. Also, there is a delay of 1 to 3 weeks to receive the data. Notably, the participation level is low in Brussels (data for 6.5 % of hospitalised cases in August), where we may expect the proportion of unvaccinated people in hospital to be higher. Despite the limitations of the surveillance (for which work is ongoing to solve them), the data allow follow-up of trends and changes over time.

² Braeye T, Cornelissen L, Catteau L, Haarhuis F, Proesmans K, De Ridder K, et al. Vaccine effectiveness against infection and onwards transmission of COVID-19: Analysis of Belgian contact tracing data, January-June 2021. Vaccine. Online publication 2021 Aug 19; Available from: <https://www.sciencedirect.com/science/article/pii/S0264410X21011087>



2. International situation

Learning from the evolution and management of the epidemic in other countries can help assess the (expected) situation and strategy in Belgium. The countries below were selected for their early vaccination, their advancement in administering a third dose and/or their high vaccination discrepancies.

2.1. Israel

The incidence in Israel rose to 1,200 mid-January 2021, to then decline to a value as low as 2 in the first half of June 2021. Early September 2021, it rose to a staggering 1,400, a value not reached before and only currently shows signs of reaching a plateau. Over the same time period, hospitalisations per million people per day rose from 15 to 160, and deaths per million per day went up from 0.22 to 2.84, a 13-fold increase. The underlying explanation for this new surge in cases remains unclear and requires further research. Several hypotheses have been raised, including the rise of delta-variant-effect in an incompletely vaccinated population, loosening of NPIs, the possibility of immune waning. Israel has chosen to apply broadly a third vaccination dose. Results are encouraging, but arguably it is too early to reach firm conclusions. One would typically like to see the effect over the course of months.

2.2. United Kingdom

The current incidence in the United Kingdom is 725. Confirmed cases reached a peak on 15 July 2021 (about 60,000), then declined towards 26,000 (end of July), but are now back at about 42,000 a day. Around these same times, daily hospitalizations went from 954 down to 739 and now back up to a bit over 1,000 per day. Mortality has continued to gradually incline, but on 1 Sept 2021, a peak of 207 deaths is observed, which had not happened since 15 March 2021. On 8 Sept 2021, 8,098 patients were in hospital, which had not happened since early March 2021. On 8 Sept 2021, 1,060 people were in mechanical ventilation beds, which had not happened since 15 March 2021. Contact behavior investigation indicates that people continue to limit contacts beyond what is allowed. SAGE is worried about schools having reopened.

2.3. United States of America

In the United States, the incidence rose to 664, and the number of deaths per day is again at about 1,500 (half the value of the winter 2020-2021 peak). There is a clear link between the indicators (cases and hospitalisations) on the one hand, and the combined effect of vaccination and NPIs on the other. In Alabama, with a full vaccination rate of 38%, intensive care is overwhelmed, even with an already drastically cut-down non-COVID care. In Louisiana, Texas and Florida, ICU is nearly full. In such states, ICU beds are roughly equally split between COVID and non-COVID. In Florida, the low vaccination rate (54%), is combined with a virtually complete lack of NPIs and a relatively old population.

In Vermont (vaccination 70%) and New York State (vaccination 60%) cases are rising, but hospitalisations increase less rapidly, and about 10% of ICU beds are occupied by COVID-19 patients.

Western states, like Oregon, show a peculiar behavior. Oregon largely escaped a Spring 2020 wave, to then have peaks in hospital occupancy on 8 December 2020 (675), 13 May 2021 (398), but currently, on 10 September 2021, there are 1221 hospital beds occupied.



3. Motivation & public support for measures (see annexes 2 and 3)

The youngest wave of the motivation barometer, which was launched between the 3rd and 8th of September (total N = 3006; mean age = 52.91 y; 69.7% female; 28.7% master level; % vaccinated person; 62.4%, 15.9% and 21.7% inhabitants from, respectively, Flanders, Brussels, and Wallonia; 16.3% was corona-infected), addressed two central questions: first, is there still sufficient motivational support for the current measures? Second, how do citizens conceive of the use of CST? The following conclusions and associated policy recommendations can be drawn.

3.1. Motivational support

The statement of some policymakers that there is no longer any motivational support for the coronary measures needs to be qualified. Although the percentage of (highly) motivated citizens in Flanders today is lower than in Wallonia and Brussels, 6/10 vaccinated Flemish people are still (highly) motivated to follow specific measures. At the same time, ½ no longer believes in the overall strategy being followed, a percentage that is much higher than before the summer. Unvaccinated people - especially those who were already infected - are no longer motivated and want to abandon the measures. Since the people of Brussels consider the risks of (serious) contamination to be higher, they are even more motivated than Flemish or Walloon participants and they also say that they are more strictly committed to the measures. Such results indicate that the population is prepared to make a sustained effort if the situation requires so.

3.2. Attitudes towards CST

The wider and generalised introduction of CST remains a sensitive issue and acts as a double-edged sword. Non-vaccinated persons remain strongly opposed to it because they perceive it as a tool to put them under pressure and they expect it to increase tension between population groups. They ask for patience and want to follow their own rhythm to come to a decision. But the patience of vaccinated persons decreases and they see the use of CST as rather positive. They see it mainly as a tool to ensure safety and health and to motivate the unvaccinated, but are also concerned that it may cause tension between different groups in society. They therefore argue for a gradual extension to high-risk contexts, such as nightlife or medium-sized events. That especially the people of Brussels are more in favour of this is logical in light of the rising corona figures in the Brussels region.

3.3. Update from the Great Corona Study

The Great Corona Study³ up to Wave 42 (13,005 respondents on 24/08/2021; over 3 million respondent surveys over all waves) showed contact behaviour returning more towards the prepandemic norm. Especially older age groups have more recently returned to more normalised contact behaviour with substantial increases in more intimate contacts (see annex 3).

The evolution of mental wellbeing also shows that the GHQ-12 score⁴ has returned to pre-pandemic levels, for both women and men. The GCS also found that students have again attained similar values as non-students of their own age. These observations may be influenced to some (unknown) extent by the holiday season.

³ UAntwerpen, UHasselt, KULeuven

⁴ The lower the better, see also previous GEMS and mental health reports.



The GCS found that people who are vaccinated are generally willing to reveal their vaccination status to third parties, and generally expect third parties to do the same for them. Unvaccinated people are much less willing than vaccinated persons to reveal their vaccination status to third parties. They show the highest reluctance to reveal their vaccination status in the workplace.

In waves 35 (20/04/2021) to 38 (01/06/2021) of the GCS, respondents indicated in which circumstances they would support/tolerate Corona Safe Ticket-like requirements. Their preferences were stable over these waves and in line with the latest information provided by the motivation barometer (see separate appendix, and previous reports of the GCS).

4. Masks & ventilation

4.1. Rationale to keep mask wearing in specific risk settings

Although it is difficult to assess the precise epidemiological footprint of each activity, scientific evidence on transmission risks and NPIs can be used to gauge the risk of specific situations, as summarised in the table below⁵. This table can be used to assess the risk (high or very high footprint) and hence balance out that risk with mitigating factors (low footprint). For example, if an indoor activity does not have good ventilation, the risk could be mitigated by wearing masks and ensuring sufficient distance between participants. Based on work of the Task Force of Ventilation, the following is a striking example. If we take a seated setting where people talk (e.g., lecture hall), and no distance is possible. Assume that aerosols build up. In that case, state-of-the-art ventilation reduces the amount of virus ingested by a factor 10, wearing a mask by a further factor 7 and others wearing a mask by another factor 7. So, the two lines of defense taken together, reduce the amount of viral exposure by a factor 500.

	Low footprint	Medium footprint	High footprint	Very high footprint
Environment	Outdoor	Indoor, well ventilated (see SHC ventilation guidelines)	Indoor not well ventilated	
Group size	<10	10-100 and/or <20% capacity	>100 and/or 20-50% capacity	>500 and/or 50-100% capacity
Type of groups	Fixed groups	Mixing groups with time interval	Mixing groups	Internationally mixing groups
Duration of contact	<15 min		> 15 min	More than one day for people without masks
Protective equipment	Mask wearing		No masks	No masks, shouting, talking, singing

⁵ [Initial version](#) constructed/published in February.



Social distancing	Distance >1.5m	Distance <1.5m		Close contact
Organisability and controllability	Highly manageable	Somewhat manageable	Not manageable	
Estimated number and type of population concerned	Very specific small group of population	Specific age range	Full Belgian population and/or intergenerational mixing	International population
Immunisation status⁶	100% immunised group		Mixed group of immunised and non-immunised	100% non-immunised group

Not all of the above elements are of equal weight and often the specific **combination** of these aspects is important in the epidemiological assessment. Viral transmission risk reduction needs to be seen as a 'Swiss cheese model', with several layers of imperfect measures leading to reasonable protection. Likewise, removal of one or several layers of protection requires compensation by adding other measures to reduce risks. For instance, in places where ventilation and distance cannot be guaranteed, mask wearing, CST or frequent testing could help to compensate for risks.

However, given the airborne nature of COVID-19, improved ventilation should remain a priority in indoor settings. In addition, knowing that ventilation improvements may remain insufficient, the use of masks might still be one of the most important NPIs in specific settings throughout the upcoming autumn and winter:

1. In particular, mask wearing remains crucial for **essential indoor activities where vaccinated and unvaccinated might meet** (e.g. public transport, grocery store, bakery, pharmacy, banking, (health) care setting, workfloor,...) to reduce overall viral circulation, in particular in presence of medically vulnerable people.
2. The GEMS recommends as a general rule to always wear a **mask in indoor settings when mixing with people of whom you don't know the vaccination/immunisation/testing status or in very high density outdoor settings**.
3. Large scale indoor gatherings (education, culture, events, religion, horeca) require strict conditions on **ventilation**. Additionally, **masks** (where and whenever possible) **and reduced densities** could help mitigate the transmission risk. The GEMS is not in favour of settings where no ventilation nor masks can be installed, but vouch for the application of sufficient other mitigating factors if these activities are nevertheless taking place (use of CST, density reduction...).
4. Testing, contact tracing, quarantine and isolation need to be maintained, enforced and logistically supported. For the specific context of schools, a balance need to be sought between accurate epidemiological monitoring and outbreak containment versus child and family wellbeing

For a comprehensive overview of the policies regarding mask wearing of some neighbouring countries and the US, please refer to annex 4. Policy makers should remain cautious before abolishing mask wearing as for many people it means the end of the pandemic and returning to wearing a mask at a later stage might be difficult.

⁶ Immunisation status has been added in comparison with the GEMS advice in February.



5. Contingency plan

A solid risk management approach requires a contingency plan to be available in case the situation worsens, in order to take effective actions in a timely manner whenever necessary. We advocate for further developing such a plan (cf. revision of [plan A-B-C](#)) in the coming weeks proposing measures such as: reinforcing compulsory telework, mask-wearing in schools, broadening the use of the CST in high-risk settings, compulsory vaccination in high risk sectors in order to protect people to develop severe COVID-19, frequent and low threshold-testing... This contingency plan should be activated when necessary, based on the [criteria defined by the RAG](#) and should assess whether measures make sense on a national, regional, provincial or local level.

A contingency plan is needed because the situation can still worsen, for which the reasoning is elaborated below:

1. There is still a clear link between the number of cases and the number of hospitalizations. The number of infections, hospitalizations and ICU admissions is determined by the properties of the virus, the number of high-risk contacts on the one hand, and the vaccination rate on the other. The current vaccination rate will significantly reduce the number of hospitalizations, but will not be reduced to zero. After all, the vaccines do not protect 100%, and we still have a lot of uncertainty about the duration of their protection, especially in people with decreased immunity (frail elderly, immunocompromised people (e.g. cancer patients), people with multiple comorbidities). The discussion here is not about the 'zero risk' (indeed does not exist), but about how large the 'residual risk' will be, and whether we can cope with that.
2. Hospital capacity: if this 'residual risk' is in the order of magnitude of the current hospitalisations in Flanders, then we can indeed cope with that. However, if that figure rises to a multiple of that (by combination season + much more viral circulation), then that becomes much more difficult, especially since it is expected that we can also get more hospitalizations with other respiratory infections. Note that we already have a 10% ICU occupancy in Belgium due to COVID-19 (on average lower in Flanders, but also e.g. 8% in the province of Antwerp). For an influenza peak, you should count on another 5-10% of your ICU occupancy. Many hospitals are also struggling with staff outages on critical shifts after 1.5 years of COVID-19, so there is not much reserve to cope with another big wave. Outside of hospitalizations, a new major wave could also lead to overloading of first-line services, to an increase in absenteeism, and to an increase in long COVID.
3. Season: the experience of last year, and of other respiratory viruses, teaches us that transmission is a lot more common in the colder months of autumn and winter (combination of behavior and climatic conditions). For that reason, an increase in infections, and therefore also hospitalizations, is to be expected anyway.
4. Impact delta variant: this variant is up to twice as contagious as the original virus that we dealt with during the autumn and winter of 2020. There is evidence (e.g. in the UK) that infections with this variant are more likely to give rise to hospitalisations. Social contacts and circumstances that yielded few infections last year can now lead to many more people being exposed, and depending on the background characteristics of the persons exposed (in terms of vaccination status and age), generate many more infections over a short period of time. The experiences in countries with lower vaccination rates have already shown the havoc that this variant can cause. We expect good protection of the vaccines, but, as with any vaccine, it is not 100%. A combination of very high contagiousness and many risk contacts (e.g. at school, nightlife, work, public transport,...) can lead



to a new wave of cases in a short period of time, which can also have an impact on the number of hospitalisations at a rate of +/- 40% increase in hospitalisations with a doubling of the number of cases.

5. Impact of vaccination: the high vaccination rate in Flanders is a particularly strong point. This has allowed the schools to reopen 'in vivo', and life to return to normal step by step. However, there are still many uncertainties: especially about the duration of the protection, about how solid the protection will be in people with very weak immunity, especially given abundant circulating virus. Let us not forget that both the virus and the vaccines are brand new, and so there is still a lot to learn / adjust.
6. Models: the combined effects of increased transmissibility of the delta variant, the seasonal effect of the autumn and winter, the opening of schools and workplaces, the further loosening of NPIs, the absence of a structural ventilation plan, the extent to which people will maintain cautionary voluntary behaviour despite government relaxations and the extent to which vaccination modulates these effects remains to be seen. The SIMID modelling consortium has already attempted to shed light on this [via various simulations](#). They came to the conclusion that if we already return to our pre-pandemic behavior (i.e. without any restrictions), we will still be facing a very large wave. The European CDC (ecdc) and other European modelling groups converge to the same conclusion. It seems more certain to maintain a number of basic measures as a 'safety buffer', in order to keep the number of infections (and therefore also hospitalisations) under control, and to gradually reduce measures as our knowledge on the delta variant and the vaccines continues to grow.
7. Measures: specific measures do play an important role in keeping the epidemic under control, especially those that reduce the creation of aerosols (masks, ventilation, outdoor, capacity reduction indoors), as well as the continued testing and isolation of new cases (see above). Nudging towards low threshold (rapid) testing strategies needs to be considered. The consistency and logic of specific measures can indeed still be improved.
8. Support: data from various public surveys in recent months show that among vaccinated people there is still motivation to respect measures (more than among non-vaccinated people), and that most people are still spontaneously very cautious. Updates to these surveys are on the way. For the sake of all the above arguments, it seems to us essential to maintain and encourage this intrinsic caution, rather than declaring that the pandemic is over (quod non).
9. Summary: the success of the vaccinations lies in allowing society to function normally again to some extent in this complex health crisis. However, there remains great uncertainty about the course of the epidemic in the coming months. That is why we advocate maintaining a reasonable set of measures (masks, capacity reduction, ventilation, testing/ quarantine), in the interest of the previously set objectives (in particular, not letting the healthcare system capsize and keeping the schools / companies open as much as possible sustainably).

6. Transition plan and common foundation prerequisites

To support the current risk management approach, the **advisory and operational bodies** closely involved into risk assessment and management strategy of the pandemic should remain available at least over the winter. In addition, supporting **tools and information sources** (such as the national info-corona website to streamline communication) should continue to exist during the coming months. Ideally, an optimisation exercise is carried out to identify which bodies (and their tasks), tools, and information sources could be retained in the future and how these should be embedded.



Annex 1. Monitoring Belgian COVID-19 infections in work sectors in 2021

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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. Two sources of information on infection in work sectors will be used in this report: the RSZ/ONSS data and the contact tracing data.

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 NISSO 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.

1.2. Contact tracing

For companies affiliated with IDEWE, COVID-19 positive tested employees are reported to IDEWE starting from 22 July 2020. Of these index cases, contact tracing is performed of high and low-risk contact within the company. Subsequently, appropriate measures are taken within the company and by high-risk contacts to limit spread of the infection. Since 11 March 2021, index cases are asked about the work relatedness of their infection. At the start of the contact tracing, data were registered in a shared Excel file. From 29 October 2020 onwards, a 'tracing application' was used to register all notifications of index cases in companies under medical surveillance of IDEWE. Note that high and low-risk contacts are registered only for contacts in the company, contacts at home or in leisure time are not registered.

An index case can be any person present in the company. It can be an employee, but also an interim worker, an intern, etc. Importantly, for schools, the index case can also be a student. Of the index cases the employer information is retrieved via the INSZ number by IDEWE. Information of the employer is subsequently grouped by region and by customer segments. Although some customer segments are similar to the NACE code sectors, this is not true in general. IDEWE considers 10 customer segments based on the NACE codes of the companies, but these segments resemble only partially level 1 and 2. The segment classification is based on similarities in the needs of IDEWE's customers and in the services IDEWE provides for them.

The incidences in the RSZ/ONSS sectors may differ from those in the contact tracing customer segments due to two aspects:

1. The RSZ/ONSS data concerns all employees and self-employed workers, while the contact tracing data concerns only companies under surveillance.
2. Similar named sectors and customer segments may contain different companies.

For instance, the NACE sector 'education' contains only information on positive cases among employees, while the contact tracing data also contains pupils. In schools, a considerable amount of index cases were pupils, especially since the onset of increased testing of children in January 2021. Finally, the contact tracing for the education segment is performed by regionally organised Student Guidance Centres (SGC). The organisation of the contact tracing by the SGC can vary from centre to centre and often only index cases with high-risk contacts are reported to IDEWE.

IDEWE has 9 regional offices that cover the surrounding areas and that are called after the city where they are located. Most Belgian provinces have one regional office, except Antwerp that is served by the regions Antwerpen, Mechelen and Turnhout, and Namur that serves all of Wallonia. The sole exception is Public transport. Companies belonging to this segment are not regionally divided.

Note that some larger companies have organised contact tracing by their internal prevention service. Data of these companies are however not included in this analysis, causing an underestimation of index cases in general. For some segments this underestimation might be more important than for others.



2. Methodology

2.1. RSZ/ONSS data

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 back transformed 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 (17–30 August 2021) 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.

2.2. Contact tracing

In addition to the comparison of the 14-day incidence of index cases between customer segments under surveillance, also the 14-day incidence of index cases between regions are compared. The reported day is the last day of the 14-day period.

Since its initiation on 29 October 2020, the tracing application registers in a standardized manner, besides information on incidences, also information on high-risk and low-risk contacts of index cases. Per segment and per region, the mean number of high-risk contacts by the index case over the entire study period (29 October 2020–2 September 2021) and the four-weekly percentage of index cases with two or more high risk contacts are evaluated.

There might be an underreporting of high-risk contacts because the number of contacts for an index case is set equal to 0 by default by the application. For index cases, who for example could not be contacted or who refused to answer, the number of high and low-risk contacts is reported 0, which may not coincide with reality. The incidences reported by contact tracing depend on the testing willingness in sectors and accuracy in reporting high-risk contact.



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 21 sectors at level 1, the sectors with a 14-day incidence on 30 August 2021 significantly above the working population average are Administrative and support service activities (sector N), Transportation and storage (sector H) and Human health and social work activities (sector Q) (Table 1 and Figure 1). The 14-day incidences in the working population and the general population are almost equal, resulting in many sectors with a 14-day incidence significantly lower than the working and general population average, such as Education (sector P). The increase in the 14-day incidence since the beginning of July has slowed down, but still continues.

Figure 1: 14-Day incidence of COVID-19 infection of all 21 sectors at Level 1 in both employees and self-employed workers

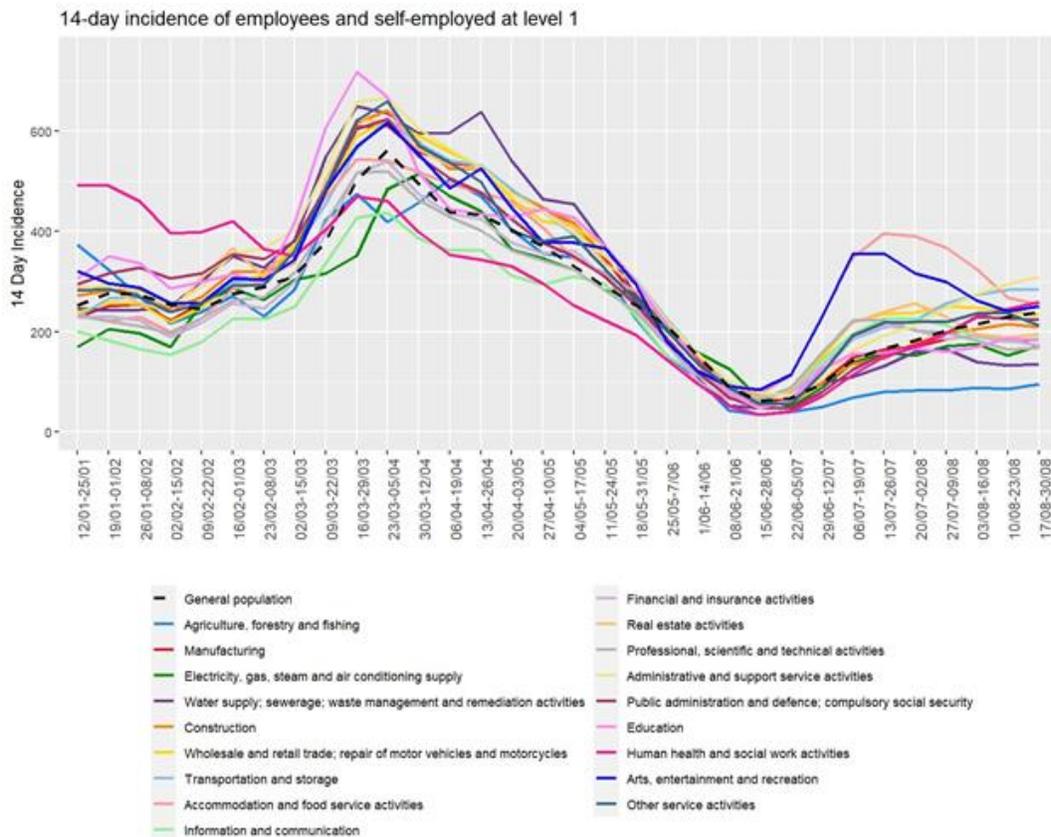


Table 1: 14-Day incidence of COVID-19 infection of all 21 sectors at Level 1 on 30 August 2021

DESCRIPTION	NACE-code	Total number of workers	Total number of incidence (95%CI) all workers	Incidence (95%CI) employees	Incidence (95%CI) self-employed	Percentage of self-employed workers
Administrative and support service activities	N	443366	309(293;326)	340(322;359)	164(138;195)	18.25
Transportation and storage	H	309507	284(266;303)	272(253;292)	401(334;482)	9.25
Human health and social work activities	Q	664479	259(247;272)	266(253;279)	185(152;225)	8.25
Accommodation and food service activities	I	323622	254(237;272)	264(245;285)	216(184;253)	23.40
Arts, entertainment and recreation	R	109562	251(223;282)	300(262;343)	165(130;210)	37.99
Working population		4444082	245(240;250)	245(240;250)		
General population			239	239	239	
Wholesale and retail trade; repair of motor vehicles and motorcycles	G	844444	234(224;245)	236(225;248)	227(206;250)	22.54
Public administration and defence; compulsory social security	O	559821	224(212;237)	224(212;237)		0.19
Other service activities	S	161792	212(191;236)	217(188;251)	207(177;241)	49.15



Construction	F	382775	209(195;224)	215(197;235)	199(178;223)	41.24
Real estate activities	L	58974	195(162;234)	238(185;306)	163(125;212)	57.86
Information and communication	J	181383	188(169;209)	194(171;220)	175(143;214)	30.66
Manufacturing	C	631319	182(172;193)	186(175;198)	149(122;182)	10.38
Education	P	470330	182(170;195)	181(169;194)	206(158;269)	5.75
Financial and insurance activities	K	159884	172(153;194)	181(159;206)	139(105;184)	21.98
Electricity, gas, steam and air conditioning supply	D	21512	172(125;237)	178(128;247)		6.13
Professional, scientific and technical activities	M	390476	168(156;181)	173(156;192)	163(146;182)	48.03
Water supply; sewerage; waste management and remediation activities	E	37500	136(103;179)	137(103;182)		6.30
Agriculture, forestry and fishing	A	89583	96(78;119)	111(82;151)	86(64;115)	58.63

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 30 August 2021 significantly higher than the working population average are: Security and investigation activities (sector 80), Services to buildings and landscape activities (sector 81), Wholesale and retail trade and repair of motor vehicles and motorcycles (sector 45), Postal and courier activities (sector 53), Land transport and transport via pipelines (sector 49), Warehousing and support activities for transportation (sector 52), Social work activities without accommodation (sector 88) and Food and beverage service activities (sector 56) (Table 2 and Figure 2). Remarkably, the 14-day incidence in the Human health activities (sector 86) and Residential care activities (sector 87) is among the highest of all sectors.

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 and the incidence in the health care and residential care sector

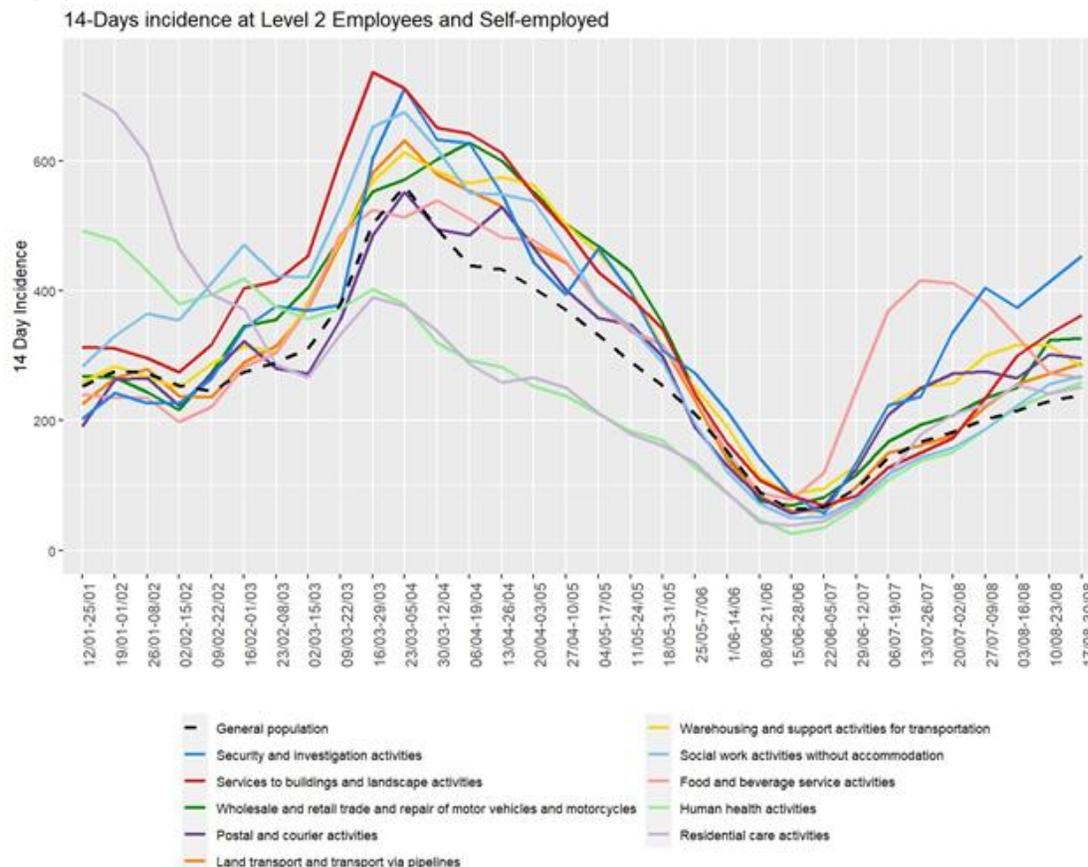




Table 2: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 2 on 30 August 2021

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
Security and investigation activities	80	20705	454(371;555)	454(371;555)		5.21
Services to buildings and landscape activities	81	241436	362(339;387)	392(366;420)	164(125;215)	13.75
Wholesale and retail trade and repair of motor vehicles and motorcycles	45	95107	327(293;365)	317(276;364)	347(287;419)	32.97
Postal and courier activities	53	47635	296(251;349)	297(250;353)	287(170;484)	10.07
Land transport and transport via pipelines	49	159028	288(263;316)	260(235;288)	500(408;613)	11.64
Warehousing and support activities for transportation	52	95406	283(251;319)	290(257;327)	177(95;329)	5.93
Social work activities without accommodation	88	171747	269(246;295)	271(247;297)	221(126;389)	3.16
Food and beverage service activities	56	285283	265(247;285)	275(254;298)	229(195;269)	24.36
Human health activities	86	319380	258(241;276)	272(253;292)	178(144;220)	14.96
Residential care activities	87	173413	252(229;277)	252(229;277)	217(90;520)	1.34
Working population		4444082	245(240;250)	245(240;250)		
General population			239	239	239	

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 30 August 2021 significantly higher than the working population average are: Sale, maintenance and repair of motor vehicles and accessories (sector 453, 451, 452), Other passenger land transport (sector 493), Private security activities (sector 801), Activities of call centres (sector 822), Construction of utility projects (sector 422), Cleaning activities (sector 812), Stalls and markets sale (sector 478), Postal and courier activities (sector 532), Residential care activities and social work activities without accommodation (sector 879, 889), Warehousing and storage (sector 521), Restaurants (sector 561) and Hospital activities (sector 861) (Table 3 and Figure 3).

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

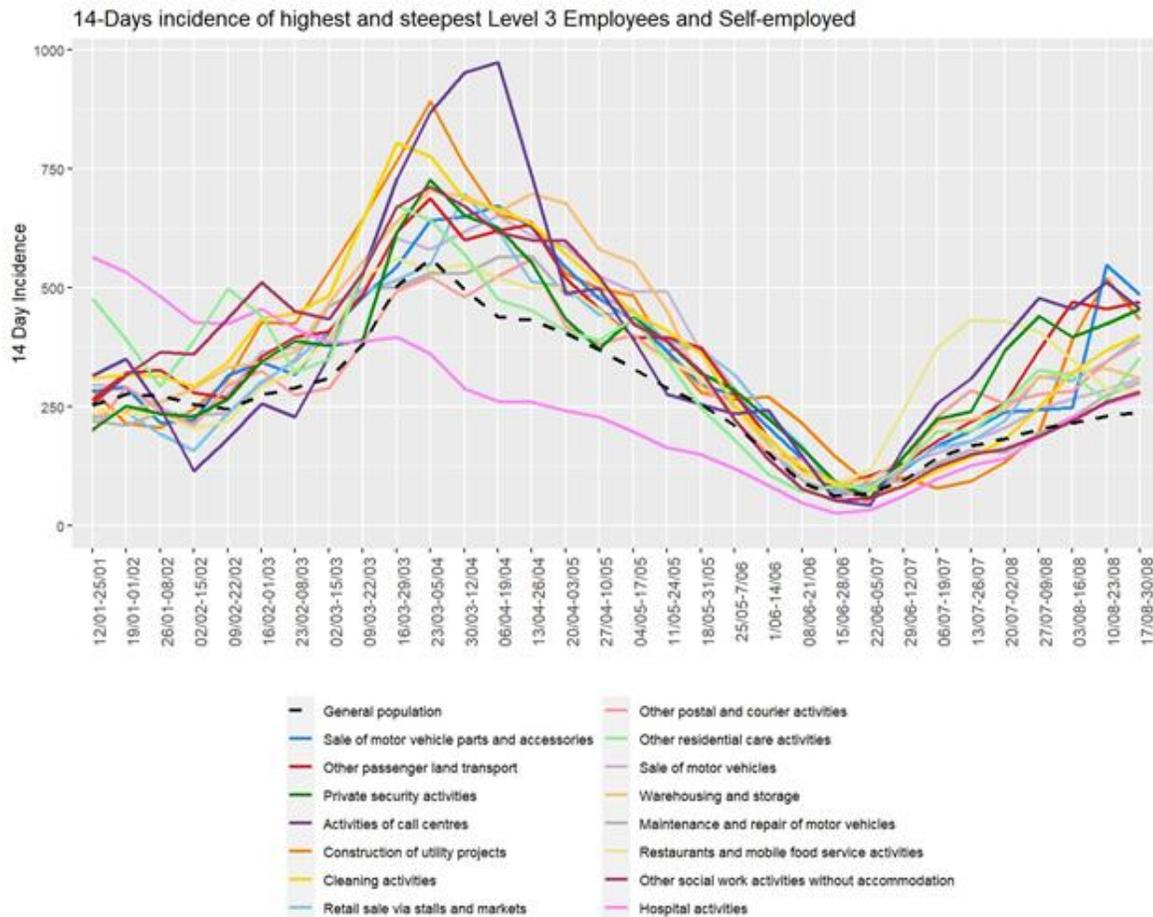




Table 3: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 3 on 30 August 2021

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
Sale of motor vehicle parts and accessories	453	15464	485(387;608)	520(409;660)	312(156;623)	16.45
Other passenger land transport	493	44586	471(412;539)	430(370;500)	746(554;1004)	13.12
Private security activities	801	19737	456(371;560)	456(371;560)		3.19
Activities of call centres	822	11648	455(348;595)	455(347;597)		1.81
Construction of utility projects	422	12963	432(333;561)	438(331;579)	392(187;820)	13.97
Cleaning activities	812	202985	402(375;430)	410(382;440)	266(185;383)	5.56
Retail sale via stalls and markets	478	9548	398(290;547)		440(311;622)	76.44
Other postal and courier activities	532	14767	386(298;500)	428(320;573)	283(161;498)	28.83
Other residential care activities	879	16667	354(274;457)	361(279;467)		3.48
Sale of motor vehicles	451	49838	309(264;362)	245(198;304)	444(352;560)	32.28
Warehousing and storage	521	37540	309(258;371)	309(258;371)		2.76
Maintenance and repair of motor vehicles	452	30897	301(246;369)	320(245;419)	280(205;381)	46.75
Restaurants and mobile food service activities	561	214737	285(263;308)	292(268;319)	257(214;309)	21.55
Other social work activities without accommodation	889	122776	281(253;312)	284(255;316)	218(121;393)	4.15
Hospital activities	861	218841	276(255;299)	276(255;299)		0.32
Working population		4444082	245(240;250)	245(240;250)		
General population			239	239	239	

3.4. Level 4 work sector

In the sectors at level 4 with a minimum of 3,000 workers, the sectors with the highest 14-day incidences on 30 August 2021 are Passenger land transport (sector 4932, 4931), Whole and retail sale, especially for motor vehicles (sector 4531, 4764, 4511, 4771, 4520), Construction of utility projects for electricity and telecommunication (sector 4222), Operation of arts facilities (sector 9004), Private security activities (sector 8010), Activities of call centres (sector 8222), Service activities to air transport (sector 5223), Cleaning activities (sector 8122, 8121), Child day-care (sector 8891), Postal and courier activities (sector 5320), Other residential care activities (sector 8790), Wholesale and service of food (sector 4638, 5629) and Warehousing and storage (sector 5210) (Table 4 and Figure 4).

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

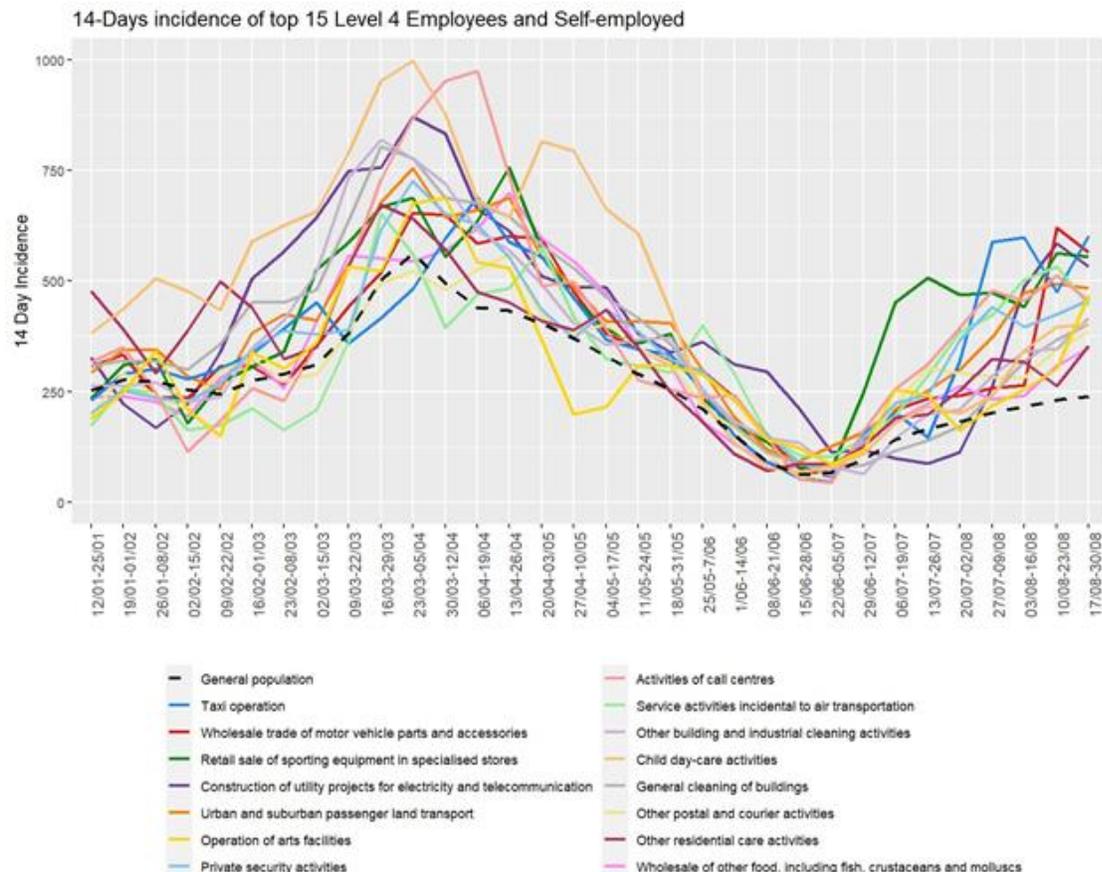




Table 4: 14-Day incidence of COVID-19 infection in sectors with the highest incidence at Level 4 on 30 August 2021

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
Taxi operation	4932	8819	601(459;786)	368(235;576)	930(665;1299)	42.06
Wholesale trade of motor vehicle parts and accessories	4531	11879	564(444;716)	609(478;776)		10.08
Retail sale of sporting equipment in specialised stores	4764	8123	554(414;741)	554(414;741)		15.48
Construction of utility projects for electricity and telecommunication	4222	8068	533(396;718)	539(391;743)		15.12
Urban and suburban passenger land transport	4931	29752	484(411;570)	477(404;563)		2.84
Operation of arts facilities	9004	5769	468(321;682)	561(382;823)		20.65
Private security activities	8010	19737	456(371;560)	456(371;560)		3.19
Activities of call centres	8220	11648	455(348;595)	455(347;597)		1.81
Service activities incidental to air transportation	5223	6742	445(311;636)	445(311;636)		5.46
Other building and industrial cleaning activities	8122	24519	416(343;505)	453(367;559)	290(178;473)	22.65
Child day-care activities	8891	28784	403(336;483)	411(341;495)	280(117;671)	6.35
General cleaning of buildings	8121	174627	402(373;433)	408(379;440)	217(120;391)	2.98
Other postal and courier activities	5320	14767	386(298;500)	428(320;573)	283(161;498)	28.83
Other residential care activities	8790	16667	354(274;457)	361(279;467)		3.48
Wholesale of other food, including fish, crustaceans and molluscs	4638	10345	348(251;482)	288(193;429)	595(338;1045)	19.55
Other food service activities	5629	11209	339(247;466)	364(261;507)	190(61;587)	14.62
Sale of cars and light motor vehicles	4511	46057	317(270;373)	249(199;311)	457(361;578)	33.03
Retail sale of clothing in specialised stores	4771	47436	312(266;366)	336(282;400)	218(142;334)	20.23
Warehousing and storage	5210	37540	309(258;371)	309(258;371)		2.76
Maintenance and repair of motor vehicles	4520	30897	301(246;369)	320(245;419)	280(205;381)	46.75
Working population		4444082	245(240;250)	245(240;250)		
General population			239	239	239	

3.5. Level 5 work sector

In the sectors at level 5 with a minimum of 3,000 workers, the sectors with the highest 14-day incidences on 30 August 2021 are Passenger land transport (sector 49320, 49310), Whole and retail sale (sector 45310, 47640, 47716, 45113), Construction of utility projects for electricity and telecommunication (sector 42220), Activities of football clubs (sector 93121), Private security activities (sector 80100), Activities of call centres (sector 82220), Youth work associations (sector 94991), Service activities to air transport (sector 52230), Manufacture of bodies of motor vehicles (sector 29201), Nurseries and creches (sector 88911), Cleaning activities (sector 81220, 81210), Postal and courier activities (sector 53200) and Wholesale and service of food (sector 46389, 56102, 56290) (Table 5 and Figure 5).



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

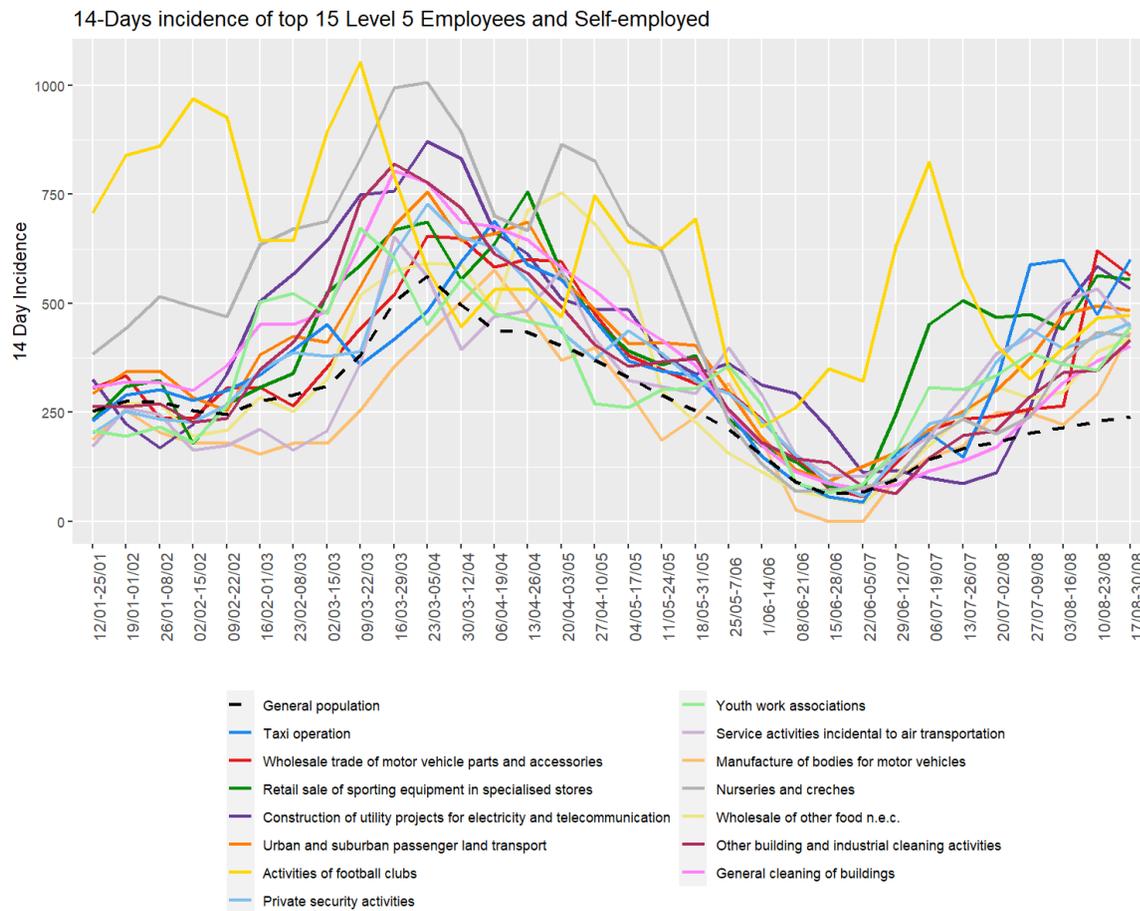


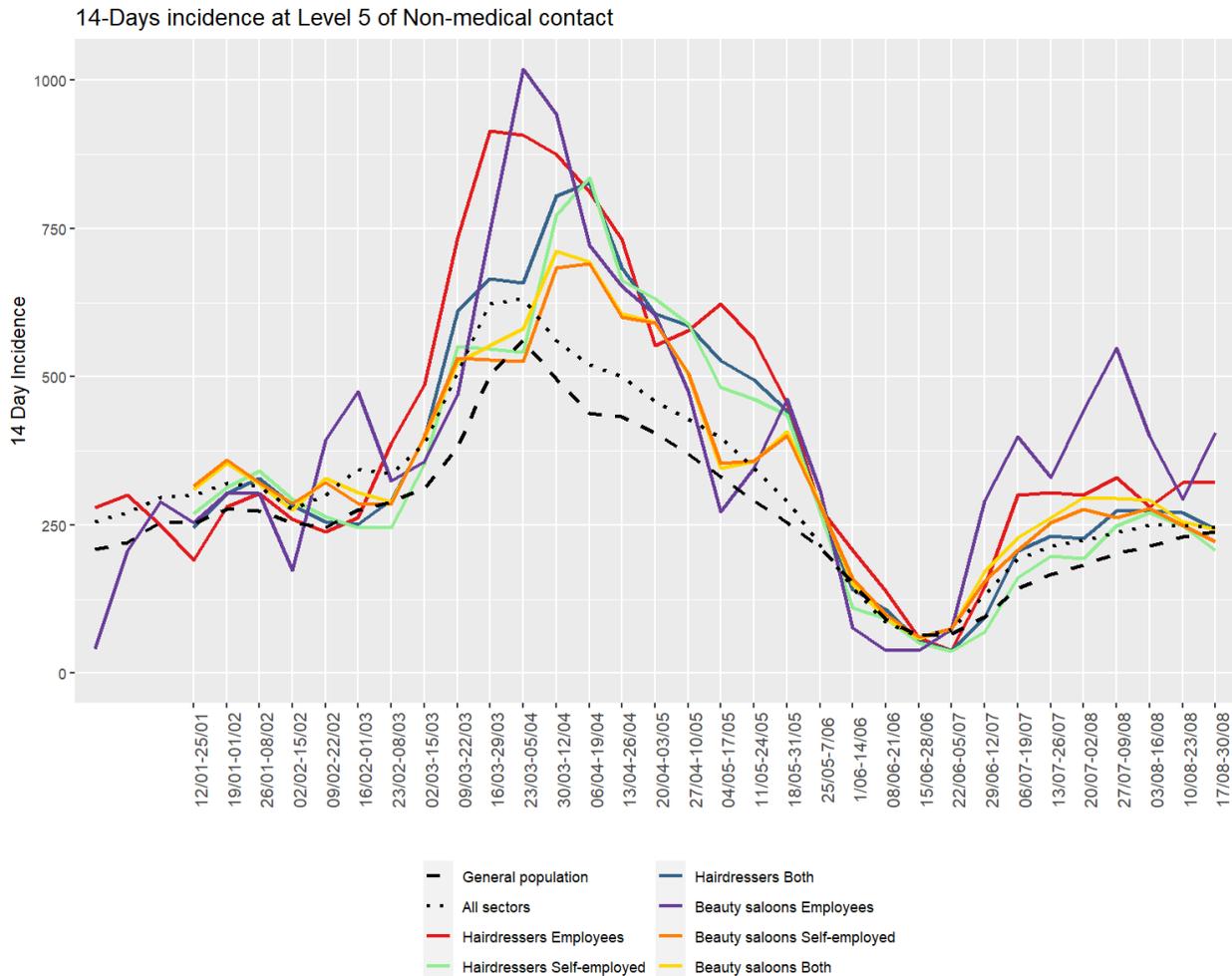
Table 5: 14-Day incidence of COVID-19 infection of sectors with the highest incidence at Level 5 on 30 August 2021

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
Taxi operation	49320	8819	601(459;786)	368(235;576)	930(665;1299)	42.06
Wholesale trade of motor vehicle parts and accessories	45310	11879	564(444;716)	609(478;776)		10.08
Retail sale of sporting equipment in specialised stores	47640	8123	554(414;741)	554(414;741)		15.48
Construction of utility projects for electricity and telecommunication	42220	8068	533(396;718)	539(391;743)		15.12
Urban and suburban passenger land transport	49310	29752	484(411;570)	477(404;563)		2.84
Activities of football clubs	93121	5497	473(322;694)	591(393;888)	187(60;578)	32.37
Private security activities	80100	19737	456(371;560)	456(371;560)		3.19
Activities of call centres	82200	11648	455(348;595)	455(347;597)		1.81
Youth work associations	94991	6278	446(308;645)	446(304;654)		7.26
Service activities incidental to air transportation	52230	6742	445(311;636)	445(311;636)		5.46
Manufacture of bodies for motor vehicles	29201	4388	433(276;678)	433(273;686)		5.43
Nurseries and creches	88911	25176	425(352;513)	433(357;525)	309(129;740)	6.59
Wholesale of other food n.e.c.	46389	7399	419(295;595)	341(220;528)	720(399;1295)	20.60
Other building and industrial cleaning activities	81220	24519	416(343;505)	453(367;559)	290(178;473)	22.65
General cleaning of buildings	81210	174627	402(373;433)	408(379;440)	217(120;391)	2.98
Other postal and courier activities	53200	14767	386(298;500)	428(320;573)	283(161;498)	28.83
Restaurants with limited service	56102	93699	365(328;406)	386(342;435)	307(245;385)	26.84
Other food service activities	56290	11209	339(247;466)	364(261;507)	190(61;587)	14.62
Retail sale of clothes and accessories in specialized stores	47716	34743	331(276;397)	360(297;436)	178(96;331)	16.07
Retail sale of cars and light vans (less than or equal to 3.5 tons)	45113	39091	330(278;392)	251(198;319)	500(390;641)	31.89
Working population		4444082	245(240;250)	245(240;250)		
General population			239	239	239	



Finally, when considering specifically the non-medical contact professions, such as hairdressers and beauty salons, we see a higher incidence in non-medical contact professions employees compared to self-employed during the Summer period (Figure 6).

Figure 6: 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 7 and 8).

The 14-day incidence in the Administrative and support service activities (sector N), is markedly elevated compared to the working population, mainly due to the increased incidence in Private security (sector 8010), Cleaning activities (sector 8121, 8122) and Call centers (sector 8220) (Figure 7).

Also the Transportation and storage (sector H), show an increased incidence compared to the working population, which is caused by the Passenger land transport sector (sector 4931, 4932), but also Warehousing (sector 5210), Air transport services (sector 5223) and Other postal and courier services (sector 5320) are increased.



Although the 14-day incidence in Accommodation and food service activities (sector I) and Arts, entertainment and recreation activities (sector R) is similar to the working population average, individual sub sectors show an increased incidence, such as Restaurants and other food services (sector 5610, 5629) and Activities of football clubs sector 93121).

The 14-day incidence in all subsections of Education (sector P) is below the working and general population average, except for the Other education (sector 855). Also, in Hairdressers (sector 96021) and in Beauty salons (96022) the incidence is around the working and general population average. In the Other service activities (sector S), the incidence in the youth work associations (sector 94991) is increased.

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. In most manufacturing sectors the incidence is below or close to the working and population average, including the Processing and preserving of meat and poultry sectors (sector 1011, 1012 and 1013). Although a few sectors in the Wholesale and Retail sale (sector 46, 47) have an elevated incidence (sector 4638, 47112, 47113, 47640 and 47716), in almost all sectors in Sale of motor vehicles (sector 45) and in Manufacture of motor vehicles (sector 2920) the incidence is increased. (Figure 8).

Surprisingly, the incidence in the Human health and social work sector (sector Q) is increased compared to the working and general population average, which is mainly caused by elevated incidences in Child day-care activities (sector 8891) and Other residential care (sector 8790) (Figure 7). But it is striking that the incidence is no longer well below the population average for hospital and residential care employees, as it has been immediately after the vaccination campaign.

Figure 7: Forest plot of 14-Day incidence and 95% CI of selected sectors on 30 August 2021 in both employees and self-employed

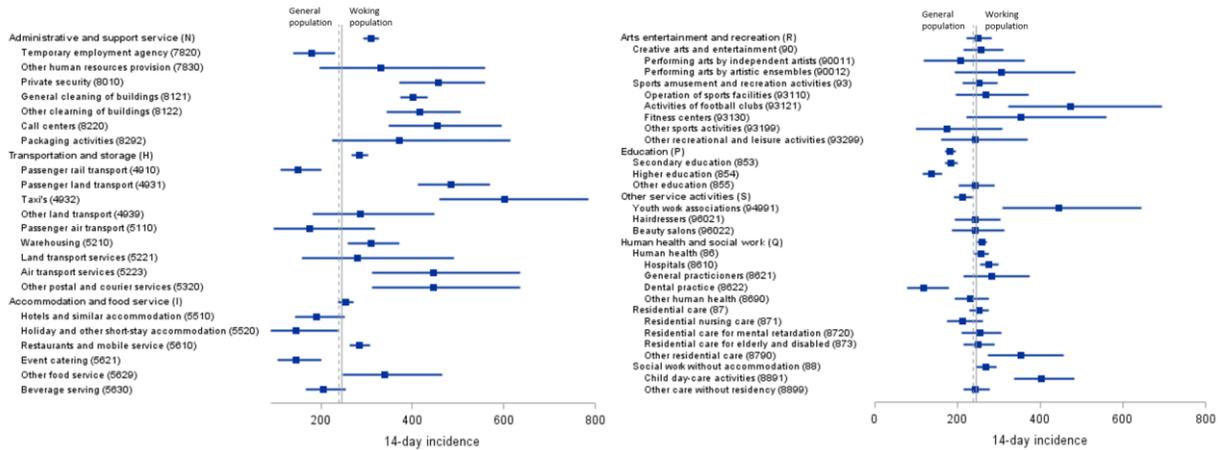
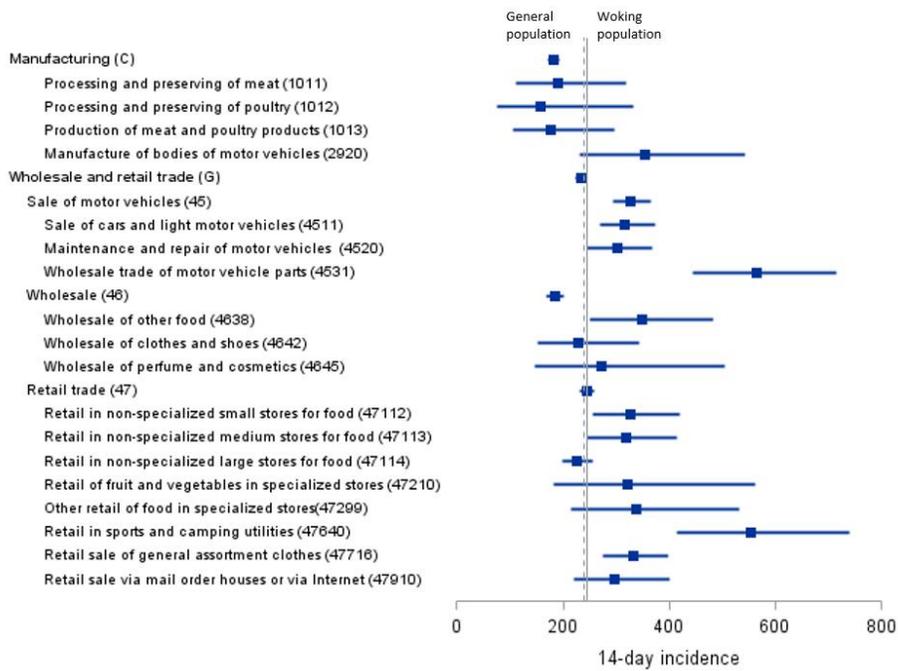




Figure 8: Forest plot of 14-Day incidence and 95% CI of selected sectors on 30 August 2021 in both employees and self-employed

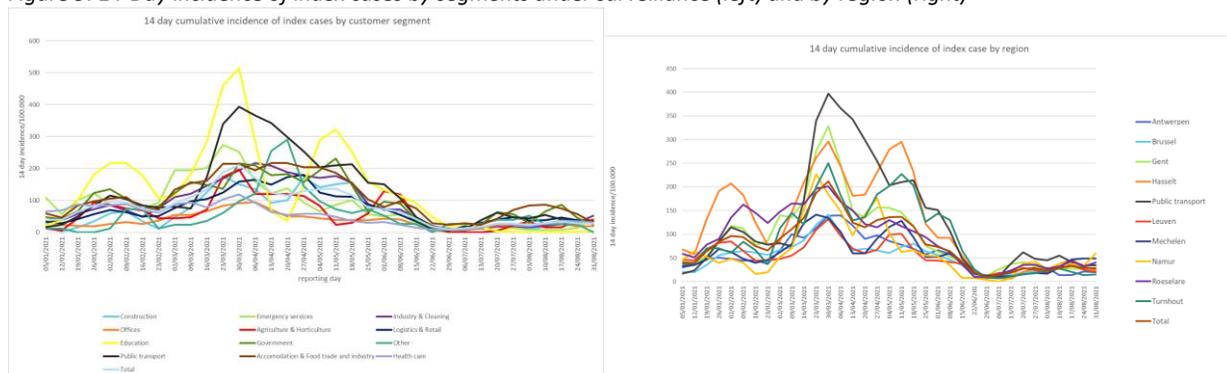


3.7. Contact tracing

In 2020-2021 about 800,000 employees are under medical surveillance of IDEWE. Among these, 20,670 COVID-19 index cases were registered between 22 July 2020 (week 30) and 2 September 2021, for whom the customer segment, region and the registration date are known for 20,397 index cases.

The 14-day incidence declined in all segments and regions since 11 May 2021 and reached the lowest point on 29 June 2021 of 10 cases per 100,000 employees (Figure 9). Since the first week of July incidence is rising again and stabilizing around 28 per 100,000 on September 2nd. The 14-day incidence does not differ significantly between segments. The regions with the highest incidences are Namur and Mechelen with a 14-day incidence of 59 respectively 49 cases per 100,000 employees. Note that two factors, mentioned above, may cause bias in the figures: employees of some large companies are not included and beside employees, external persons are also registered as an index case. Especially students and pupils may influence the figures of Education.

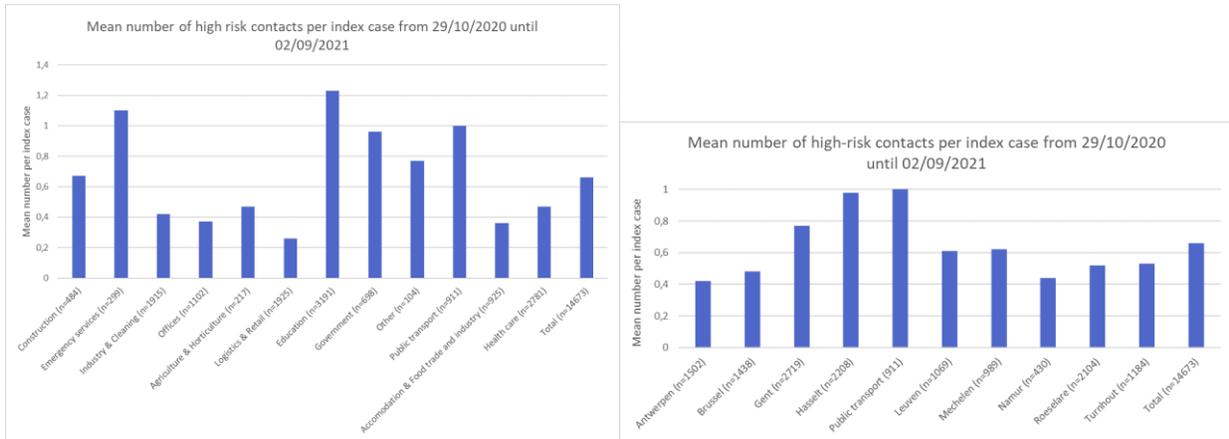
Figure 9: 14-Day incidence of index cases by segments under surveillance (left) and by region (right)





Since the establishment of the tracing app on 29 October 2020, there are 14,673 index cases of whom high-risk contacts were recorded. Of 14,552 index cases, the customer segment and region is known. The mean number of high-risk contacts in segment Education and Emergency services is above 1, while in the Hasselt region a higher mean number of high-risk contacts is reported in the period 29 October 2020–2 September 2021 (Figures 10).

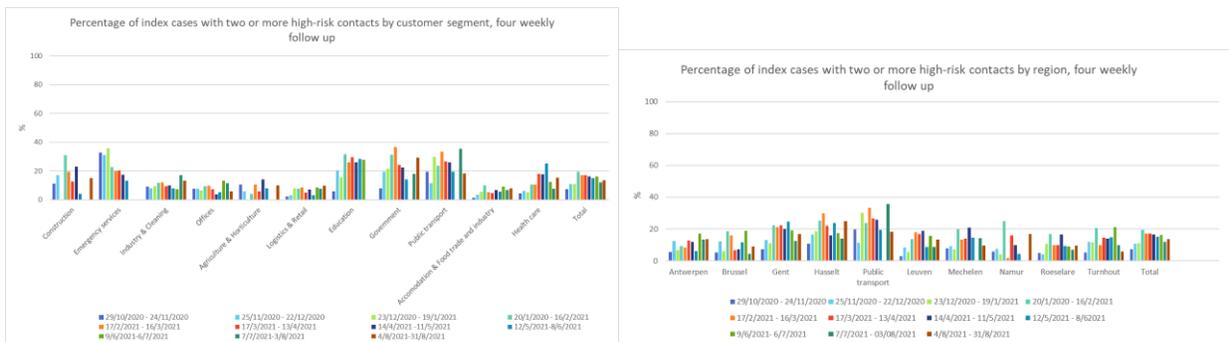
Figure 10: The mean number of high-risk contacts per index case by segments under surveillance (left) and by region (right)



The number of high-risk contacts per index case varies from 0 to 62, with more than 99% being lower than 10 high-risk contacts. Seventy-three percent had 0 high risk contacts. A sole high number of high-risk contact for an index will influence the mean number for a segment importantly, especially when groups are small. To avoid extremely high numbers of contacts influencing results, we report the percentage of index cases who had two of more high-risk contacts per four weeks.

The percentage of index cases with two or more high-risk contacts is slightly increasing in most segments and regions in the most recent period (4–31 August 2021), except for Offices, Public Transport, Mechelen and Turnhout (Figure 11).

Figure 11: Four weekly percentage of index cases with two or more high-risk contacts by segments under surveillance (left) and by region (right)



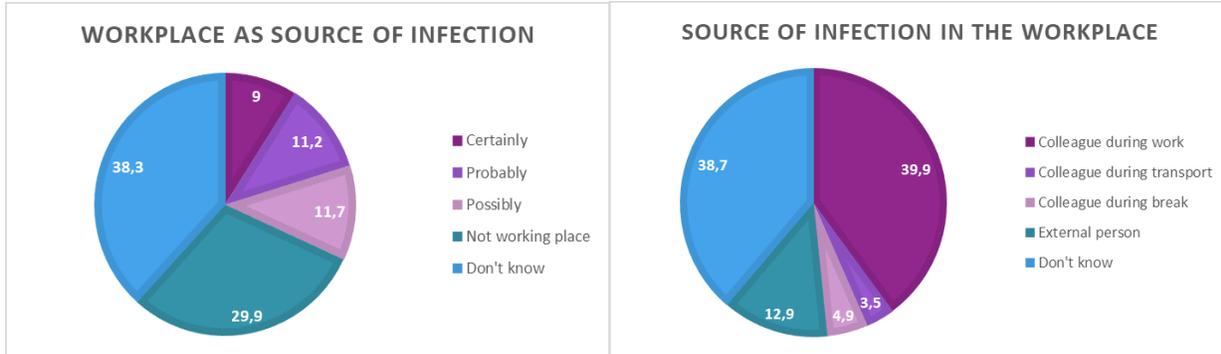
Since 11 March 2021, index cases are asked if they contracted COVID-19 during work and if they did, which were the circumstances or the source of the infection. Note that pupils and other external index cases were left out of the following analyses.

From 6396 index cases, we have information about perceived work relatedness of the source of infection. While 38% of the index cases does not know whether the infection took place at work, 20% responded that they were certainly or probably infected at work (Figure 12 left). From 2035 (32%) of the index cases



that answered they were certainly, probably, or possibly infected at work, further information was obtained on how the infection took place (Figure 12 right). A majority of the index cases (61%) indicates to know the source of infection at work.

Figure 12: Distribution of the probability and source of infection at work by index case



Since the start of summer holidays there is a steep decline of index cases in education and pupil index cases dropped to zero at 7 July 2021.

Since 6 June 2021, the vaccination status of index cases is registered, with the type of vaccine if applicable. The vaccination dates are retrieved from vaccinnet to evaluate if a person can be considered fully protected. Because only the date of the notification of the index case is available and not the date of a positive PCR test, index cases are considered fully protected if the second dose (or the only dose in case of the Johnson and Johnson vaccine) is administered 3 weeks or more before the date of notification. The assumption is made that the latency between a positive PCR test and the registration via the contact tracing app is maximally 1 week.

From 1,092 adult index cases we had information about their vaccination status: 657 were partially or completely vaccinated (450 Cominarty, 133 Vaxzevria, 35 Moderna and 39 Johnson % Johnson) (Figure 13 left). With an increasing vaccination coverage in the working population, which was 83% on 2 September 2021 (Figure 13 right, data derived from Sciensano), it is important to evaluate these breakthrough index cases in time. The mean time between notification of infection and the second vaccine dose (or the only dose in case of Johnson & Johnson) for the breakthrough cases was 87 days (SD 54), minimum 15 days, maximum 208 days. The index cases who are fully vaccinated are the largest proportion in the last weeks (Figure 14 left). The vaccine effectiveness (VE) in fully vaccinated and protected workers is estimated using the screening method (see Giesecke: Modern infectious disease epidemiology):

$$\begin{aligned}
 VE &= \frac{(PPV - PCV)}{(PPV(1 - PCV))} \\
 &= \frac{0,81 - 0,58}{0,81(1 - 0,58)} \\
 &= 0,67
 \end{aligned}$$

with PPV= the proportion of the entire population vaccinated and PCV= the proportion of cases that has been vaccinated.

Note that this result and the biweekly evolution (Figure 14 right) should be interpreted with caution. Partially vaccinated and partially protected workers are not taken into account in this calculation nor is the rapidly changing vaccination coverage of the population. This method is not recommended by the WHO in the early stages of vaccine roll-out.



Figure 13: Distribution of the probability of vaccination in the general population (right) and the vaccination status of index cases (left).

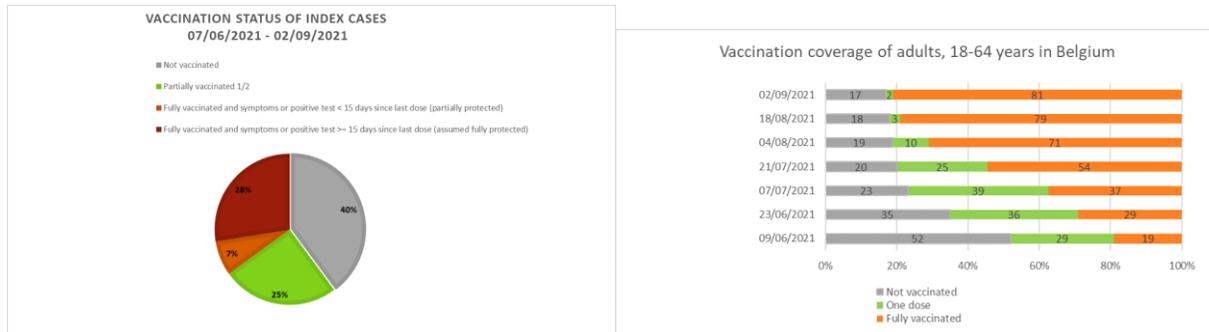
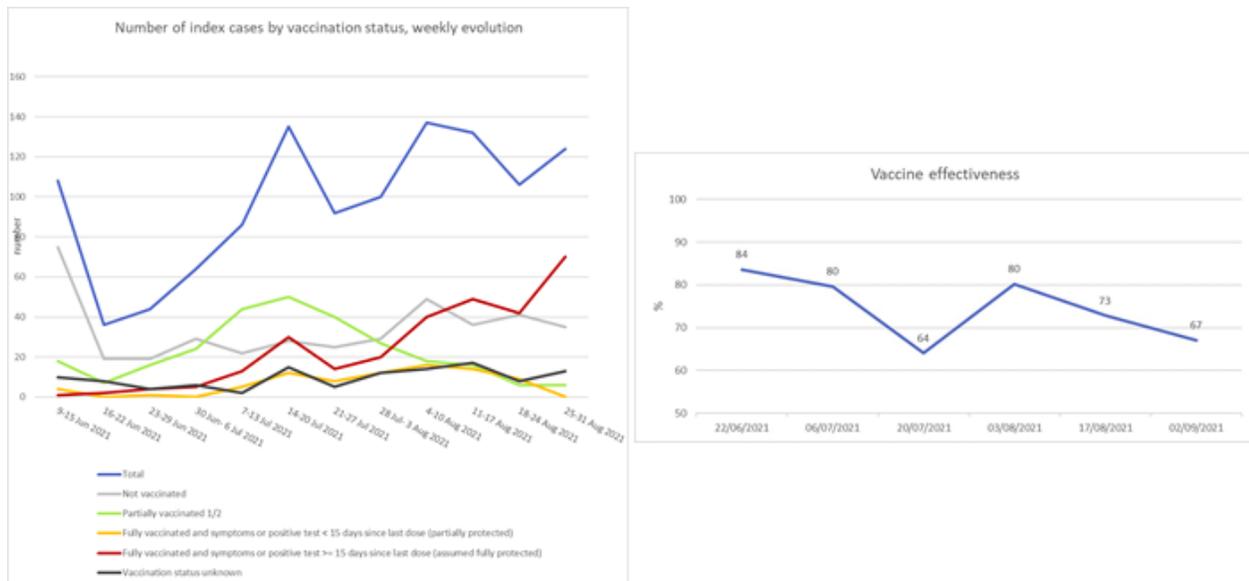


Figure 14: The weekly evolution of index cases and their vaccination status (left) and the vaccine effectiveness (right).



4. Conclusion

Despite the limitations of the data, both the contact tracing as the RSZ/ONSS data demonstrates that the increase of the 14-day COVID-19 incidences in July 2021 is slowing, but continues to increase in most sectors. The incidence in the working population is converging to the incidence in the general population again at the end of the Summer holiday. Vigilance is still required in those sectors where telework is not possible, where workers are often exposed to close physical proximity, and where climate conditions favors transmission of the virus.

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 shows that in the index cases, where this information was available, 9% indicated that the workplace was certainly the source of infection.

It is clear that in most sectors at level 1 the 14-day incidence follows the pattern that is observed in the general population. Two sectors at level 1 have a sharper increase in incidences than the working population average, Administrative and support service activities (sector N) and Transportation and



storage (sector H). The contact tracing also shows the highest incidences in the Industry and cleaning segment and that the incidence pattern is highest in the Namur region.

With an increased circulation of the delta variant of concern of SARS-CoV-2, it is important to carefully monitor incidence of COVID-19 in the sectors with multiple close physical proximity, especially with younger, not yet vaccinated individuals, and are not able to telework. Passenger land transport, Youth work association and Child day-care activities for example all show a steeper increase of incidences and require careful attention.

For some sectors the reason for the steeper increase in incidences is not immediately obvious, such as private security, cleaning, call centers and motor vehicle sale and manufacture. It would be worthwhile to evaluate the hygiene protocols and its practice in these sectors.

Although the incidence in non-medical contact professionals is comparable to the working and general population average, the incidence in employees in non-medical contact professions show a clear increased incidence compared to the self-employed professionals.

It is encouraging to note that employees in most manufacturing sectors and wholesale sectors are well protected, as they are often not able to telework. Also the return of the incidence in Arts, entertainment and recreation (sector R) and Accommodation and food service (sector I) to the working and general population average, after the steep increase in the beginning of the Summer, is encouraging

However, worrisome is that the 14-day incidences in employees in the health and care activities are no longer well below the general population, despite the high degree of vaccination. Possibly, this increase may be partly explained because a COVID-19 infection remains possible despite being fully vaccinated.

Contact tracing data show that 28% of fully vaccinated employees had a positive PCR-test. The vaccine effectiveness (67% in the IDEWE contact tracing data) for fully vaccinated employees is lower than expected from trial data.

Acknowledgments

We wish to thank Hilde Vanacker, Chris Verbeek and Hilde de Raeve for their contribution to the analysis of the contact tracing data.



Annex 2. Update from the motivation barometer

The youngest wave of the motivation barometer, which was launched between the 3rd and 8th of September (total N = 3006; mean age = 52.91 y; 69.7% female; 28.7% master level; % vaccinated person; 62.4%, 15.9% and 21.7% inhabitants from, respectively, Flanders, Brussels, and Wallonia; 16.3% was corona-infected), addressed two central questions: first, is there still sufficient motivational support for the current measures? Second, how do citizens conceive of the use of CST? The following conclusions and associated policy recommendations can be drawn.

Motivational support

The statement of some policymakers that there is no longer any motivational support for the coronary measures needs to be qualified. Although the percentage of (highly) motivated citizens in Flanders today is lower than in Wallonia and Brussels, 6/10 vaccinated Flemish people are still (highly) motivated to follow specific measures. At the same time, ½ no longer believes in the overall strategy being followed, a percentage that is much higher than before the summer. Unvaccinated people - especially those who were already infected - are no longer motivated and want to abandon the measures. Since the people of Brussels consider the risks of (serious) contamination to be higher, they are even more motivated than Flemish or Walloon participants and they also say that they are more strictly committed to the measures. Such results indicate that the population is prepared to make a sustained effort if the situation requires so.

Attitudes towards CST

The wider and generalised introduction of CST remains a sensitive issue and acts as a double-edged sword. Non-vaccinated persons remain strongly opposed to it because they perceive it as a tool to put them under pressure and they expect it to increase tension between population groups. They ask for patience and want to follow their own rhythm to come to a decision. But the patience of vaccinated persons decreases and they see the use of CST as rather positive. They see it mainly as a tool to ensure safety and health and to motivate the unvaccinated, but are also concerned that it may cause tension between different groups in society. They therefore argue for a gradual extension to high-risk contexts, such as nightlife or medium-sized events. That especially the people of Brussels are more in favour of this is logical in light of the rising corona figures in the Brussels region.

Policy recommendations from the authors of the Motivation Barometer report

1. Communicate explicitly about the **effectiveness of the vaccination**. Indicate in the **daily corona figures the percentage of hospitalized persons who have not been vaccinated**. This will increase belief in the added value of the vaccine and may increase risk awareness among the unvaccinated. These two factors contribute to an increased willingness to be vaccinated.
2. Make it clear that vaccination continues to have an added value **even if previously infected**. This information is crucial to encourage previously infected but unvaccinated persons to vaccinate.
3. Provide insight into the overall strategy being followed. Explain clearly why not all behavioural measures can be abandoned in every situation, even if the vaccination targets have been met in Flanders and Wallonia. Explain properly the **added value of the 'residual measures'** for our health and safety. Outline a medium to long-term vision so that the population knows what to expect during the autumn and winter months.
4. **Put a lot of effort into communicating the necessity of CST. Frame CST as a necessary instrument to ensure the safety** of the population and the proper functioning of the healthcare sector (rather than as an instrument to give freedom). In this way, the motivational potential of CST is maximised.



The focus on safety increases its acceptance among the unvaccinated and elicits less resistance because it is perceived less as a means of pressure.

5. **Link the use of CST to the corona figures (i.e., alarm levels). This has a number of psychological advantages.** It makes clear that the primary purpose of CST is to ensure the safety and health of people. Moreover, it emphasises the temporary nature: if the corona figures improve, then CST can be abolished again.
6. Introduce CST only in **sub-regions** and **specific contexts** where its use is perceived as **legitimate**, such as large-scale events and nightlife (keeping a distance is impossible; people screaming). Choose contexts where control and supervision are routine tasks to limit the logistical burden.

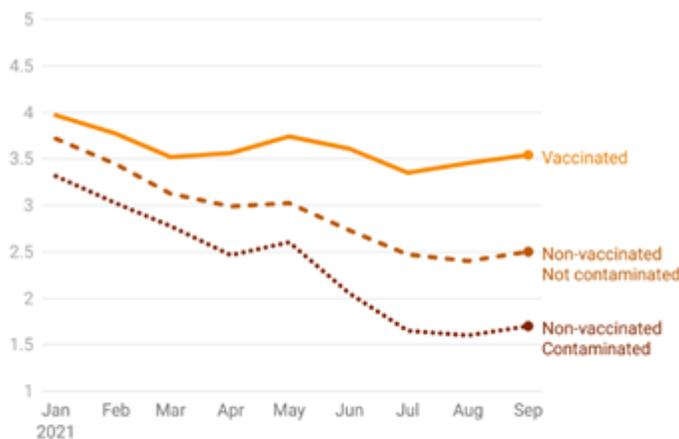
Annex

Motivational support

As for individuals' motivation, the following conclusions can be drawn. First, the motivation to voluntarily follow the measures - especially wearing a mouth mask, keeping a distance, hand hygiene and ventilation - has been stabilizing for some time and has not decreased further since August 2021⁷. Figure 1 shows that the already established motivational gap between vaccinated and unvaccinated persons remains, with unvaccinated persons being especially low motivated. In percentage terms, 51% and 22% of the vaccinated, respectively, are still strongly or somewhat motivated to follow the measures, while these percentages drop to 12% and 14%, respectively, among the unvaccinated. **This means that there is still motivational support among the vaccinated.**

Second, there are **important motivational differences within the unvaccinated group**: those who have already had a corona infection are much less motivated to comply with the measures than those who have not yet been infected. Infected, unvaccinated people most probably assume that they have already built up sufficient immunity to be protected. As a result, they no longer see the need for the measures.

Figure 1 - Voluntary motivation to adhere to measures in vaccinated and unvaccinated persons from January 2021.



Scores are weighted

Note. Response scale ranges from 1 (= Totally disagree) to 5 (= Totally agree)

⁷ In examining differences between vaccinated and unvaccinated individuals, the role of other relevant socio-demographic characteristics, such as age, gender, education level and region, were statistically filtered out.



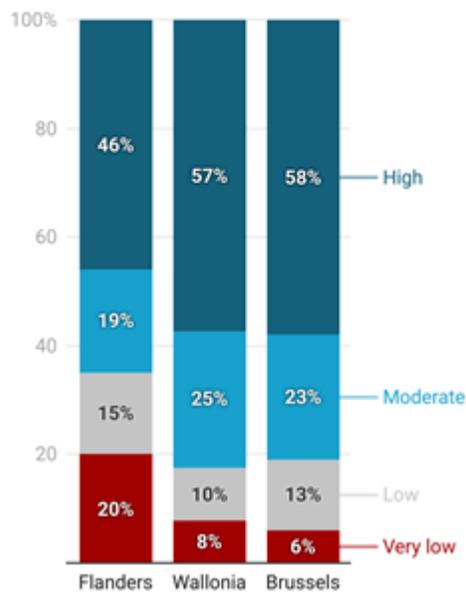
Third, important **regional differences** can be observed in Figure 2⁸: the proportion of strongly and partially motivated vaccinated persons is lower in Flanders (46% and 19%, respectively) compared to both Wallonia (57% and 25%, respectively) and Brussels (58% and 23%, respectively). Parallel to these regional differences, Brussels participants consider the chance of (serious) contamination of the population to be higher and indicate that they follow the measures more strictly than Walloon or Flemish participants.

Fourth, it should be noted that an **important indicator of demotivation**, namely the degree to which people doubt the strategy followed to control the pandemic, increased during the summer months. Figure 3 indicates that 51% of the vaccinated Flemish people no longer believe (at all) in the global approach, a percentage that is comparable to that of Brussels (50%) and Wallonia (48%). While this percentage is lower among Flemish vaccinated persons than among unvaccinated Flemish persons (87%), it is also higher than in June (21%). The higher vaccination rate in Flanders undoubtedly plays a role in this: the population was promised that the measures would be abolished if the intended vaccination targets were achieved.

Figure 2 - Percentage of voluntary compliance among vaccinated persons in separate regions in September 2021

Motivation across regions

The Motivationbarometer
September, 2021, among vaccinated persons



⁸ The samples collected are not representative of the socio-demographic distribution of the population. Nevertheless, since December 2020, both Dutch- and French-speaking participants were recruited and the presented findings are weighted for age, region, educational level and gender to (partially) correct for the non-representative nature of the samples.



Figure 3 - Percentage of disbelief in global strategy in separate regions in September 2021 among vaccinated persons

"Because I do not believe that the current approach to the corona crisis is helping to solve the problem"

The Motivationbarometer
September, 2021, among vaccinated persons



Covid Safe Ticket

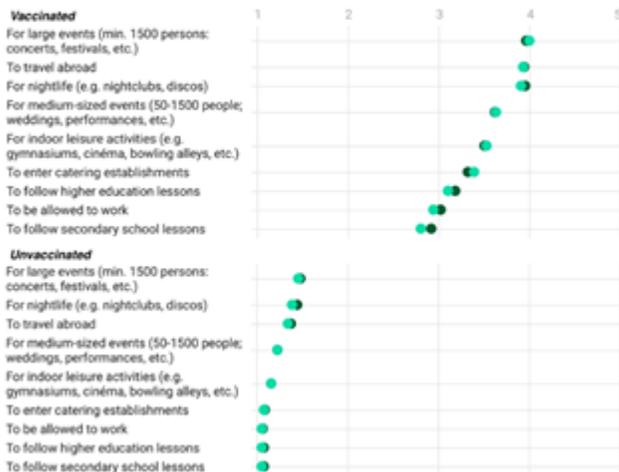
We examined to what extent citizens support the use of a Covid-Safe Ticket in various contexts, which meaning they attribute to its use and whether differences exist as a function of individuals' vaccination status and place of living. The following four conclusions can be drawn. First, as indicated in Figure 4, unvaccinated persons are strongly opposed to the use of CST, whereas vaccinated persons are more positive about the use of CST. **Vaccinated persons adopt a nuanced perspective towards its use and are in favour of targeted and selective (instead of generalized) use**, particularly in contexts where health and safety cannot be guaranteed without using CST. For example, they favour its use at major events, travel and nightlife, but much less for work, in secondary schools and colleges, with the preference for this declining slightly in September compared to August 2021.

Figure 4 - Evolution in preference for introduction of CST by sector according to vaccinated and unvaccinated participants

To what extent do you find it acceptable to introduce a corona pass in the following circumstances?

The Motivationbarometer
August - September 2021

● Aug-21 ● Sep-21



Means are weighted

Second, there are regional differences in the attitude towards the use of CST (Figure 5): vaccinated Brussels residents appear to be stronger proponents of its use on average across all contexts compared to



vaccinated Walloons and vaccinated Flemings. In Flanders and Wallonia, there is much less support for CST, certainly in the educational and professional fields.

Third, CST can serve various purposes and therefore also have different meanings. As can be noticed in Figure 6, almost 7/10 vaccinated persons indicate that the CST has a (strong) informational value and points the public towards risk situations, something the unvaccinated participants do not agree with. Furthermore, 71% of the vaccinated are convinced that CST can play a (very) motivating role, which only a minority of the non-vaccinated agrees with its motivational potential. 92% of the unvaccinated experience CST to some extent or strongly as a means of pressure to force them to vaccinate. In addition, 96% indicate that CST can be a source of potential conflict between people. However, also 6 out of 10 vaccinated persons think that the introduction of CST can cause tension. **These results show that communication during the introduction of CST will be very crucial in order to avoid tension between groups and effectively increase willingness to be vaccinated.**

Fourth, the use of the CST represents just one motivational strategy to encourage unvaccinated people to vaccinate. Figure 7 shows the evolution of the extent to which certain strategies are considered effective by vaccinated and unvaccinated people over the past few months. Some strategies focus on internal factors (i.e., following the rhythm, explaining, informing) and others on external factors (i.e., use of privileges for the vaccinated, rewarding vaccination, compulsory vaccination). Internal strategies are generally rated as more effective by both groups, but an effect of time is apparent. While belief in the usefulness of most strategies stabilizes among the vaccinated, it decreases among the unvaccinated. Undoubtedly, this is a selection effect, with an increasing hard core of unvaccinated remaining. They feel above all that their rhythm should be followed and they consider this to be the most effective strategy. At the same time, the belief in this strategy is declining among the vaccinated. **Vaccinated persons seem to have less patience than before the summer.**

Figure 5 - Trend in preference for introduction of CST by sector and region among vaccinated persons

To what extent do you find it acceptable to introduce a corona pass in the following circumstances?

The Motivationbarometer
By region, September 2021

● Brussels ● Flanders ● Wallonia

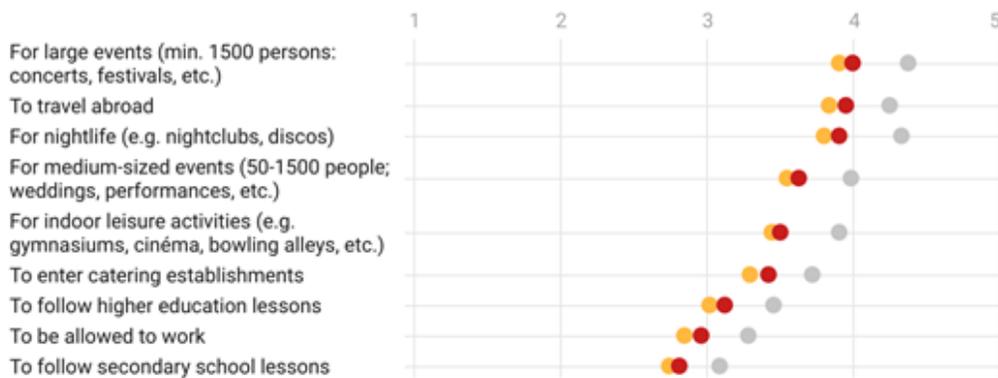


Figure 6 - Attributed meaning of CST according to vaccinated and non-vaccinated persons

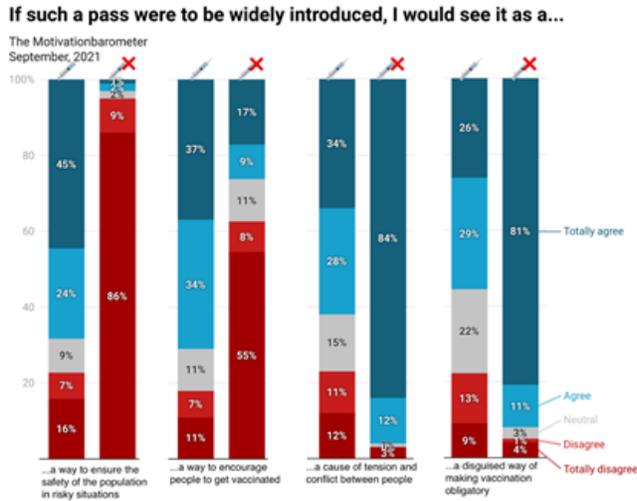


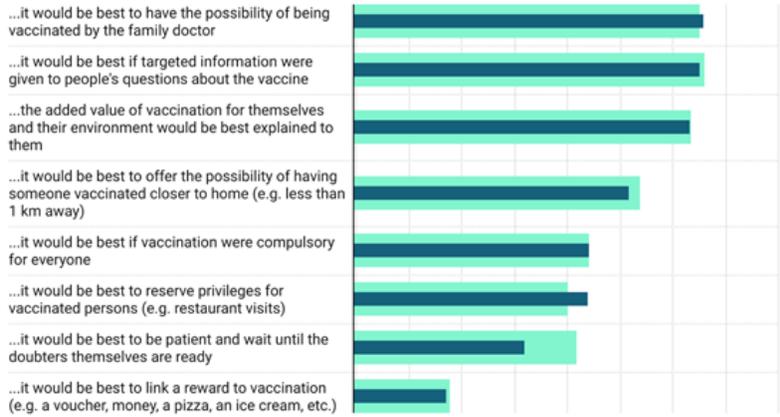
Figure 7 - Evolution in perceived appropriateness of motivational strategies according to vaccinated and unvaccinated people

Motivational strategies

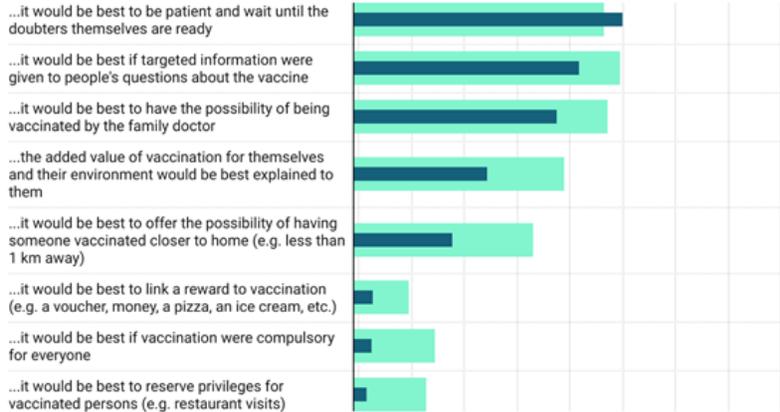
The Motivationbarometer
June and September, 2021

Jun-21 Sep-21

Vaccinated



Unvaccinated



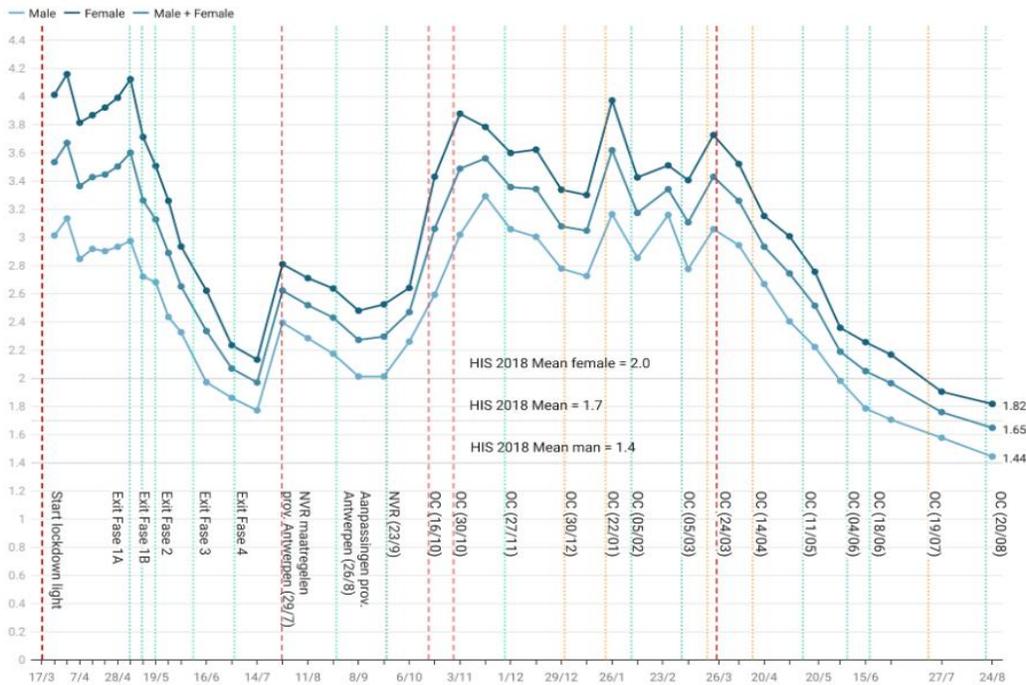


Annex 3. Update from the Great Corona Study

All results of the GCS are described after wave-specific weighting for age, gender, educational attainment and province of residence. More information on www.corona-studie.be ; <https://corona-studie.shinyapps.io/corona-studie/> ; <https://covid-en-wetenschap.github.io/2021/04/grote-coronastudie-kadering>.

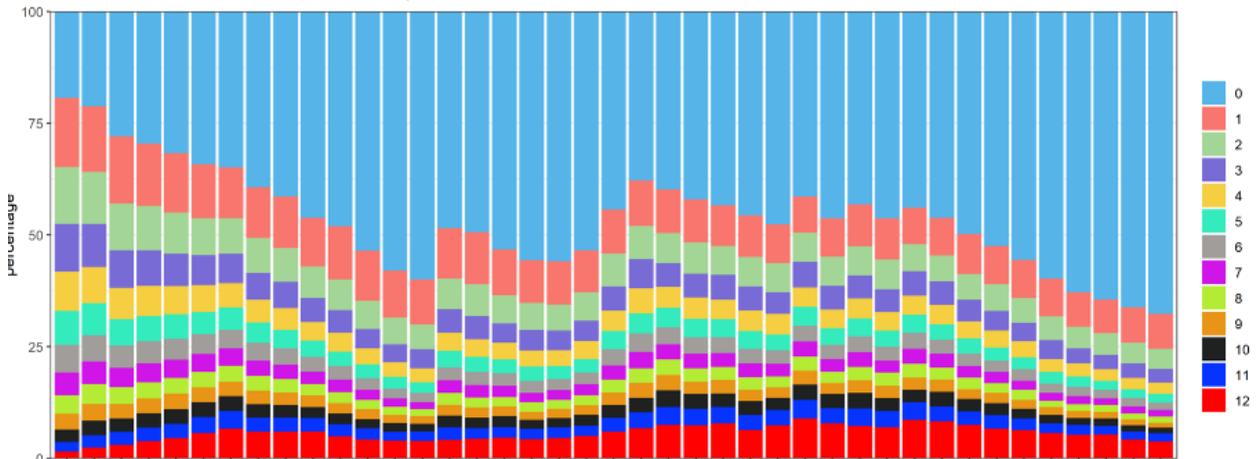
GCS Figure 1: Evolution of mental wellbeing from March 2020 to August 2021

Evolution of mental well-being waves 2-42 (GHQ-12 score)



NVR = Nationale Veiligheidsraad | OC = Overlegcomité | HIS = Belgian Health Interview Survey | Source: www.corona-studie.be
Chart: UAntwerp - UHasselt - KU Leuven Great Corona study 2020-2021 - golf 2-42 (weighted data) • Source: UAntwerp • Created with Datawrapper

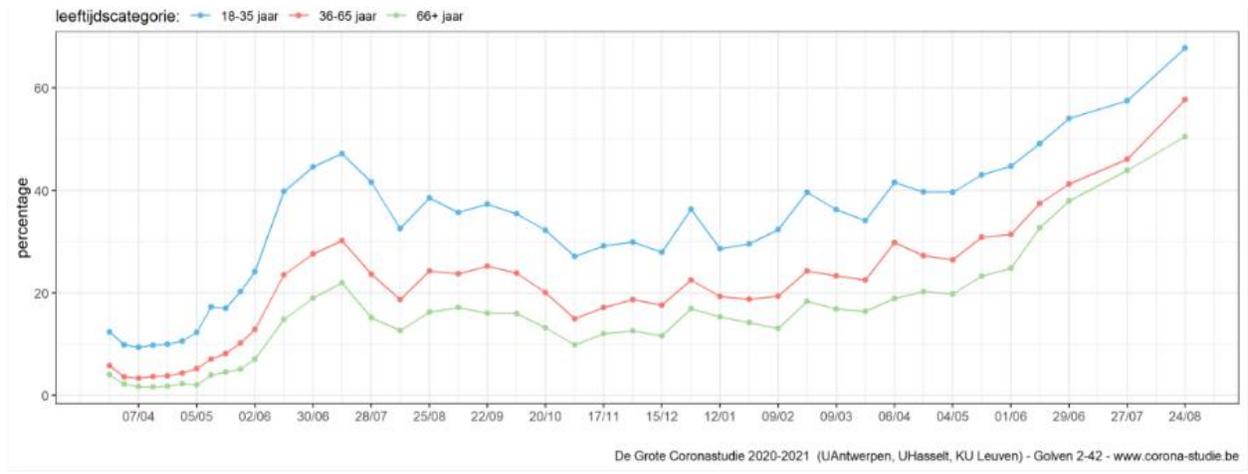
GCS Figure 2: Evolution of the distribution of the GHQ-12 score from wave 2 (24th March 2020) to wave 42 (24th August 2021). GHQ scoring: 0= no problems; 2 or more = indication of a risk of mental discomfort, 4 or more = risk of mental health problems



De Grote Coronastudie 2020-2021 (UAntwerpen, UHasselt, KU Leuven) - Golfen 2-42 - www.corona-studie.be



GCS Figure 3 : Evolution of age-specific weighted percentage indicating they shook hands, hugged or kissed someone who is not a household member over the past week (period March 2020-August 2021, waves 2 to 42).



GCS Figure 4 : Evolution of weighted indicators of social distancing

green= percentage working at least one day of the week on-site/at the office

red= percentage shaking hands, hugging or kissing at least one person outside household

blue= percentage of tests related to visiting another country





Annex 4. Benchmark on the mask rules abroad

International examples of mask wearing rules	
France	<p>Mask wearing is still mandatory outdoors in situations where the rules of distancing cannot be applied. It is a rule of common sense taking into account proximity to others and how crowded a place can be ; wearing a mask allows protecting oneself and others.</p> <p>French people should keep their masks on:</p> <ul style="list-style-type: none">• when they are in queues, in markets or flea markets, around schools when taking their children in or out, when entering or leaving cultural ceremonies, on public transport, on station platforms or around stations, ports and airports for example;• Similarly, people participating in public events, festivals or performances will be required to wear masks. Local authorities may also consider whether it is appropriate to require masks to be worn in busy shopping streets or pedestrian areas at peak times. <p>The previous exemptions from wearing masks for disabled people and children under 11 years of age will continue to apply in the few situations where masks are still required to be worn outdoors.</p> <p>The current rules for wearing masks indoors remain unchanged at this stage: offices, shops, public services, indoor shows, etc.</p>
Netherlands	<p>Mask wearing is still mandatory (from the age of 13) in public transport, passenger transport (e.g. aircraft), stations, airports, and schools (except primary schools), also for vaccinated people.</p> <p>Building managers can decide for themselves whether a mask should be worn inside. They can state this in their house rules. This also applies to indoor areas where masks are not required by law. Some sectors have their own guidelines for this (e.g. care facilities, community centres, churches or mosques).</p> <p>An exception to the requirement to wear a mask applies to people with a (visible or invisible) disability or illness .</p>
Germany	<p>Berlin: Vaccinated and recovered persons are still obliged to comply with all other protective measures such as the obligation to wear a mask and the distance requirement. Wearing an FFP2 mask without a valve (or comparable mask) is mandatory:</p> <ul style="list-style-type: none">• In bus, underground, suburban railway, tram and on ferries for passengers.• On long-distance buses, long-distance and regional trains for passengers.• At railway stations, airports and ferry terminals for passengers• In medical practices for visitors and patients• Hospitals and nursing homes for visitors and patients who are not staying in their rooms or receiving visitors.• In taxis, (charter) buses and other vehicles.• When providing and receiving permitted physical or sexual services. <p>Children and adolescents between 6 and 14 years of age must wear medical face protection in these cases.</p>



Wearing a medical face mask (surgical mask or FFP2 mask without valve) is mandatory:

- In supermarkets and shops
- On buses, undergrounds, suburban trains, trams and on ferries for personnel
- On long-distance buses, long-distance and regional trains for personnel
- At railway stations, airports and ferry terminals for personnel
- In commercial establishments
- In restaurants, including outside areas
- At cultural events for participants who are not in their seats. If the minimum distance cannot be maintained and there is no mechanical ventilation in enclosed spaces, the obligation to wear masks in enclosed spaces also applies at the seat.
- In vocational training and general adult education in enclosed spaces
- In office and administrative buildings, if the minimum distance cannot be maintained (not at the fixed workplace)
- In medical practices for the staff
- In nursing homes for residents who are not in their room or at their fixed seat during meals.
- In school buildings. On school premises, the mask may be taken off in the open if the minimum distance of 1.5 metres is maintained.
- On private journeys for persons from another person's household (except the driver:s themselves).
- At markets and in queues
- At demonstrations
- In indoor sports facilities (not during sports practice)

Nordrhein-Westfalen: Irrespective of incidence values, there is still an obligation to wear a medical mask in the following areas:

- In local public transport
- In commerce
- In indoor areas with public traffic
- In queues and at sales stands
- At sporting, cultural and other outdoor events with more than 2,500 visitors (except at fixed seating or standing areas)

Bavaria: Obligation to wear a medical face mask (mask obligation) applies in buildings and enclosed spaces, including closed public vehicle areas, cabins and the like.

The obligation to wear a mask does **not** apply:

- within private premises,
- at a fixed place of sitting, standing or working, provided that a minimum distance of 1.5 m is reliably maintained from other persons who do not belong to one's own household; this number does not apply to passengers in local and long-distance public transport or in school transport,



	<ul style="list-style-type: none">● to guests in the catering trade, as long as they are seated at the table,● in the case of services, insofar as the nature of the service does not permit it,● for staff, insofar as reliable protection against infection is ensured in cashier and counter areas by means of transparent or otherwise suitable protective walls,● for other compelling reasons. <p>Masks are not compulsory in the open air but exceptions are possible. For example, masks are compulsory in the entrance and meeting areas at events with more than 1,000 people.</p>
United States	<p>CDC recommendations on 13th of August 2021:</p> <ul style="list-style-type: none">● <i>“If you are not fully vaccinated and aged 2 or older, you should wear a mask in indoor public places.</i>● <i>In general, you do not need to wear a mask in outdoor settings.</i><ul style="list-style-type: none">○ <i>In areas with high numbers of COVID-19 cases, consider wearing a mask in crowded outdoor settings and for activities with close contact with others who are not fully vaccinated.</i>● <i>People who have a condition or are taking medications that weaken their immune system may not be fully protected even if they are fully vaccinated. They should continue to take all precautions recommended for unvaccinated people, including wearing a well-fitted mask, until advised otherwise by their healthcare provider.</i>● <i>If you are fully vaccinated, to maximize protection from the Delta variant and prevent possibly spreading it to others, wear a mask indoors in public if you are in an area of substantial or high transmission.</i>● <i>If you are fully vaccinated, see When You’ve Been Fully Vaccinated”.</i> <p><i>Wearing a mask over your nose and mouth is required on planes, buses, trains, and other forms of public transportation traveling into, within, or out of the United States and while indoors at U.S. transportation hubs such as airports and stations. Travelers are not required to wear a mask in outdoor areas of a conveyance (like on open deck areas of a ferry or the uncovered top deck of a bus).”</i></p>
United Kingdom	<p>From 19 July 2021, there is no longer a legal requirement to wear face coverings in indoor settings or on public transport but the Department of Health & Social Care you can read the following:</p> <ul style="list-style-type: none">● <i>“Lifting restrictions does not mean the risks from COVID-19 have disappeared, but at this new phase of the pandemic response we are moving to an approach that enables personal risk-based judgments.</i>● <i>While no situation is risk free, there are actions we can take to protect ourselves and others around us.</i>● <i>We expect and recommend that members of the public continue to wear face coverings in crowded and enclosed spaces where you come into contact with people you don’t normally meet. For example, on public transport.</i>● <i>You should use your judgement in deciding where you should wear one. Businesses, including transport operators, can also ask their employees and customers to wear face coverings. You should check with operators of services, venues, and settings that you use.</i>● <i>The Department for Transport has updated its guidance on safer travel for passengers.</i>



- [Infection Prevention Control \(IPC\) guidance](#) advises that patients and visitors across all healthcare settings should wear a face covering, providing it is tolerated and is not detrimental to their medical or care needs. They should also be worn in care homes to protect residents from the risk of infection.
- The Department for Education (DfE) has its own guidance on the [use of face coverings for schools and other education institutions that provide education for secondary school-age pupils, young people and adults in England](#).
- Face coverings are expected and recommended in indoor spaces where you come into contact with people you do not normally meet. However, there are some circumstances where people may not be able to wear a face covering. Please be respectful of these situations. Some people are less able to wear face coverings. The reasons for this may not always be visible”.

Different rules apply from region to region across the UK: [Northern Ireland](#), [Scotland](#) and [Wales](#).