



## 1.1. Average duration between positive COVID-19 test result and contact tracing initiation (R-9)

### 1.1.1. Documentation sheet

<b>Description</b>	<p><b>Primary indicator</b></p> <ol style="list-style-type: none"> <li>1. Average duration between positive test result and contact tracing initiation.</li> </ol> <p><b>Secondary indicators</b></p> <ol style="list-style-type: none"> <li>2. Proportion of individuals with positive test result contacted within 24 hours after the test result.</li> <li>3. Proportion of individuals with positive test result contacted within 48 hours after the test result.</li> <li>4. Proportion of contacted individuals who have installed the Coronalert app.</li> <li>5. Proportion of contacted individuals who reported using the Coronalert app to alert contacts after the positive test.</li> </ol>
<b>Calculation</b>	<p><b>Primary indicator</b></p> <ol style="list-style-type: none"> <li>1. Average duration between positive test result and contact tracing initiation: numerator = sum of durations (in days) between positive test result and contact tracing initiation; denominator = number of contacted index cases during the considered week.</li> </ol> <p><b>Secondary indicators</b></p> <ol style="list-style-type: none"> <li>2. Proportion of individuals with positive test result contacted within 24 hours after the test result: numerator = number of index cases contacted within 24 hours of positive test result; denominator = number of contacted index cases during the considered week.</li> <li>3. Proportion of individuals with positive test result contacted within 48 hours after the test result: numerator = number of index cases contacted within 48 hours of positive test result; denominator = number of contacted index cases during the considered week.</li> <li>4. Proportion of contacted individuals who have installed the Coronalert app: numerator = number of contacted index cases during the considered week who reported having installed the Coronalert app; denominator = number of contacted index cases during the considered week who accepted to answer additional questions on the use of the Coronalert app.</li> <li>5. Proportion of contacted individuals who reported using the Coronalert app to alert contacts after the positive test: numerator = number of contacted index cases during the considered week who reported using the Coronalert app to alert contacts after the positive test; denominator = number of contacted index cases during the considered week who accepted to answer additional questions on the use of the Coronalert app.</li> </ol>
<b>Rationale</b>	<p>Contact tracing is one of the major public health tools that has been developed to control the spread of COVID-19. However, many countries failed to implement it effectively.<sup>1</sup> Delays may occur at every stage of the process: between onset of symptoms and testing, between testing and results, and between a positive test result and the initiation of contact tracing. To interrupt the transmission of COVID-19, the ECDC recommended that "contact tracing should be done for as many cases as possible as fast as possible".<sup>2</sup> To monitor COVID-19 cases investigation, the ECDC recommended notably to measure the proportion of cases where contact tracing is initiated within 24 hours of diagnosis.</p> <p>In addition, many countries in Europe have developed and implemented contact tracing apps, but their impact and the willingness of the population to participate is not clear.<sup>3</sup> It was suggested that to be effective alongside other interventions, around half the total population should use the app.<sup>4</sup> However, it was highlighted that, despite some willingness to install contact tracing apps, the (correct) usage of them might have been lower.<sup>5-8</sup> In Belgium, the Coronalert app was launched in September 2020.</p>



<b>Data source</b>	Sciensano (Laboratory test database and contact tracing database)
<b>Technical definitions</b>	<p>In Belgium, test results are reported daily to Sciensano.<sup>9</sup> The test database includes test prescriptions and results reported by laboratories (molecular or antigen tests), physicians (molecular or antigen tests), and pharmacies (antigen tests).<sup>10</sup> The test database was linked with the contact tracing database via the unique pseudonymized national registry number.<sup>10</sup> A COVID-19 “index case” is defined as a person with a positive diagnostic test (molecular or antigen test), yet contact tracing could also be requested by a physician for a patient without a test result. In order to take into account only new infectious episodes and to avoid re-contacting the same person during one episode, persons with a previous infection in the past 56 days (until 1 April 2021) or 90 days (since 1 April 2021) are excluded.</p> <p>The duration between positive test result and contact tracing initiation is only calculated for index cases that were effectively contacted. Overall, between January and September 2021, 91.2% of the index cases could be reached.<sup>10</sup></p> <p>Data are reported weekly, from week 36 of 2020 (week of 31 August 2020) to week 41 of 2021 (week of 11 October 2021).</p> <p>Among the contacted index cases, around half accepted to answer additional questions on the use of the Coronalert app.<sup>10</sup> Data regarding the Coronalert app are reported monthly, from November 2020 to March 2022.</p>
<b>International comparability</b>	N.A.
<b>Limitations</b>	<p>The duration between positive test result and contact tracing initiation is only calculated for index cases that were effectively contacted. Overall, between January and September 2021, 8.8% of the index cases could not be reached.<sup>10</sup> This percentage stayed almost the same until mid-October 2021 (8.0% during the week of 27 September, 7.5% the week during the week of 4 October and 8.1%, during the week of 11 October).<sup>11-13</sup> However, this percentage was higher at the end of 2021 and the beginning of 2022 (delta and omicron variant) because of a very high number of index cases. For instance, it was 17.2% during the week of 18 October 2021, 45.8% during the week of 29 November 2021, and reached 67.0% during the week of 15 November 2022.<sup>14-16</sup> During this period several strategies have been used to prioritize the index cases that should be contacted (according for instance to the age, the virus load, the date of sampling, or the COVID-19 incidence in the area) and alternative methods to contact index cases via SMS and an online tool were deployed. As a result, measuring the average duration between positive test result and contact tracing initiation is less relevant, and results could not be compared with the results obtained before October 2021. For that reason, the indicator is only calculated from week 36 of 2020 (week of 31 August 2020) to week 41 of 2021 (week of 11 October 2021).</p> <p>Measuring the usage of the Coronalert app does not assess its efficiency in preventing the spreading of COVID-19. Also, reported usage does not necessarily represent the correct use of the app. In addition, the number of contacted index cases who accepted to answer additional questions on the use of the Coronalert app largely varies over time (4 889 in May 2021 – 80 994 in January 2022), which implies that percentages should be interpreted with caution.</p>
<b>Dimension</b>	Resilience
<b>Related indicators</b>	R-8 Average duration between COVID-19 testing and test result
<b>Reviewers</b>	Dieter Van Cauteren (Sciensano)



### 1.1.2. Results

#### Duration between test result and contact tracing initiation

The average duration between test result and contact tracing initiation was highest in the beginning of the study period (September/October 2020) as a high number of cases had to be contacted because of the second COVID-19 wave (Figure 1). It was highest in Wallonia reaching 2 days. From December 2020 onwards, the average duration stayed mainly below one day in all three regions of the country throughout the rest of the study period. (ending the week of 11 October 2021).

The proportion of individuals with positive test result contacted within 24 hours (Figure 2) follows a similar pattern with a lower proportion during the of the second COVID-19 wave in September/October 2020. There is a more marked drop in Wallonia in the proportion contacted within 24 hours but most of the individuals with positive test result were still contacted within 48 hours (Figure 3). From November 2020 onwards, most individuals (generally more than 80%) were contacted within 24 hours in all regions in Belgium, with close to 100% contacted within 48 hours.

Figure 1 – Average duration between result and contact tracing initiation (in days)

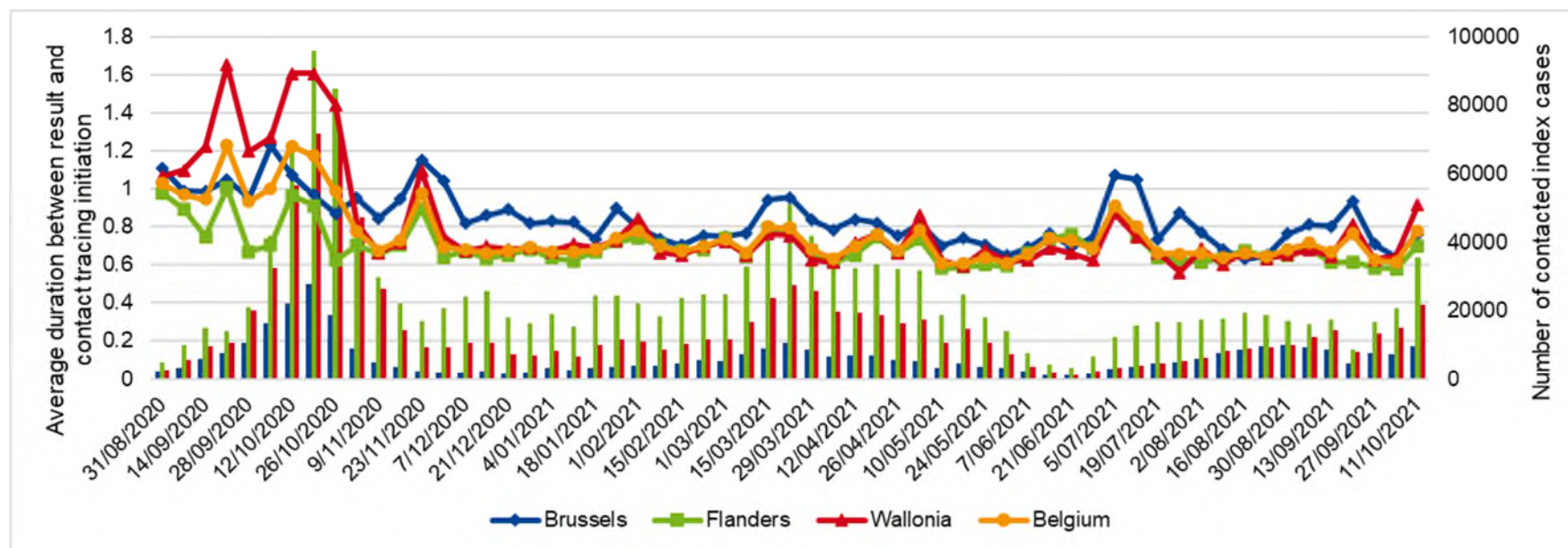
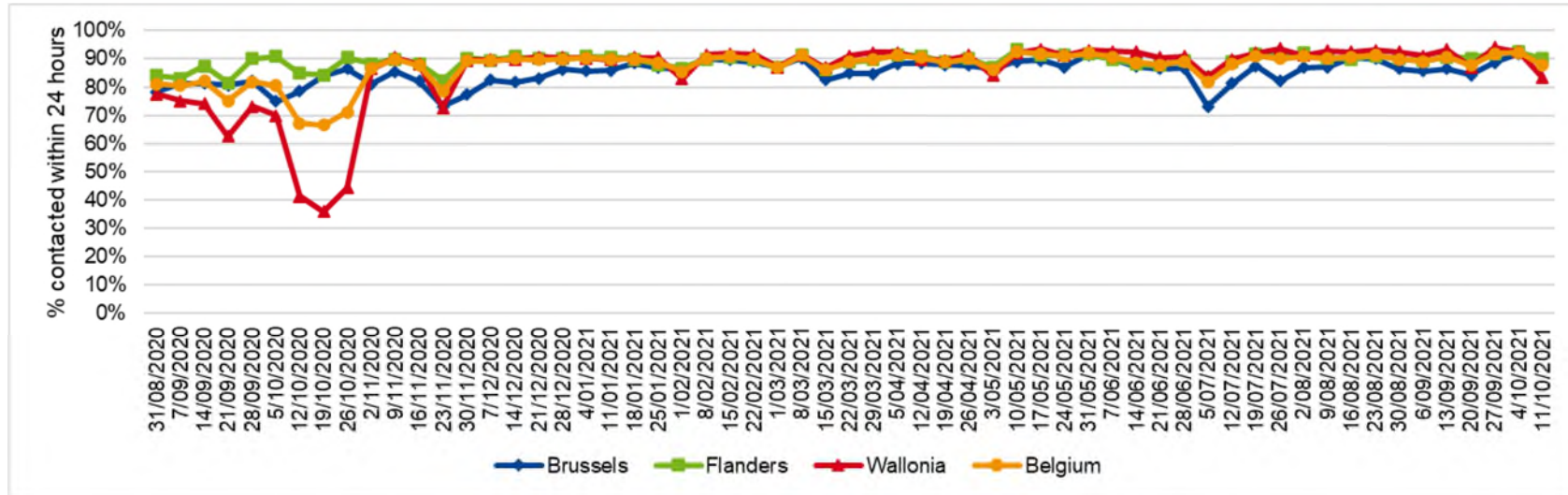


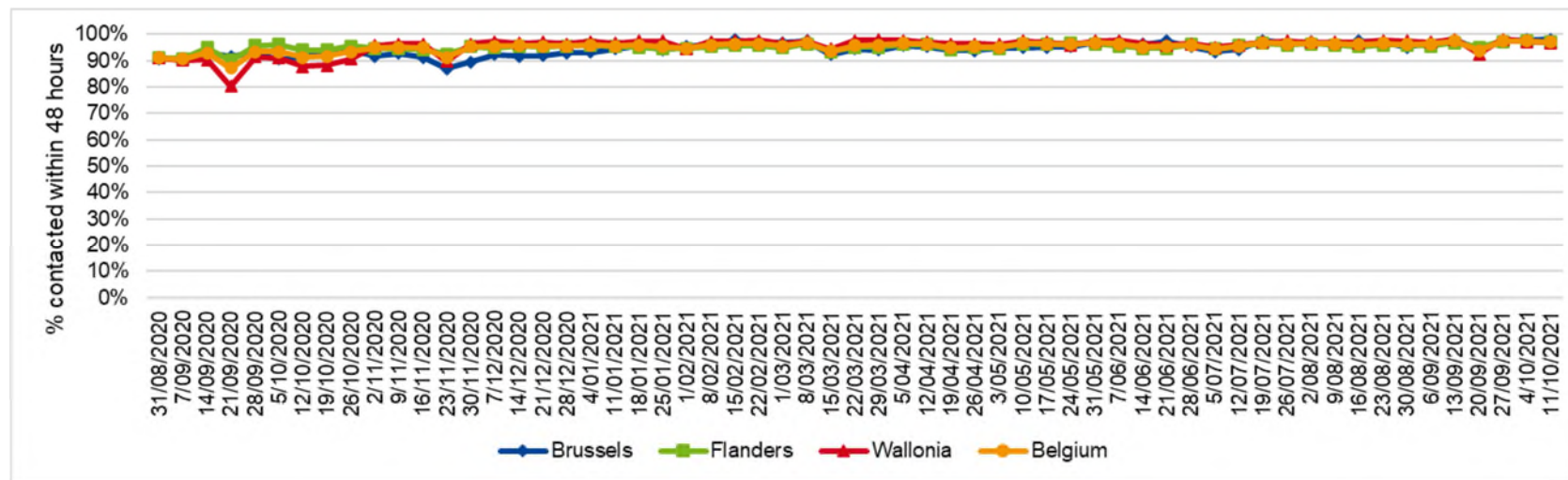


Figure 2 – Proportion of individuals with positive test result contacted within 24 hours after the test result





**Figure 3 – Proportion of individuals with positive test result contacted within 48 hours after the test result**



### Coronalert app

In November 2020, 36.3% of contacted individuals (who accepted to answer additional questions) had installed the Coronalert app (Figure 4). This percentage decreased over time until June 2021 to reach 24.1%. After some variation during the summer 2021, the proportion of contacted individuals who had installed the app remained constant at around 30% until February 2022. Even at its maximum (36.9% in March 2022), this proportion never reached 50%, which is seen as the threshold for such an application to be effective.

Trends by region were similar (decrease until June 2021, increase from September 2021). Overall proportions were higher in Flanders than in Wallonia and Brussels. A possible explanation for the decrease in the first half of 2021 may be less use of the app as the population was more widely vaccinated. A possible explanation for the increase from September 2021 onwards may be a confusion of the respondents where they mix up the different “COVID-19 apps” (Coronalert, CovidSafe, CovidScan).



Figure 4 – Proportion of contacted individuals who have installed the Coronalert app

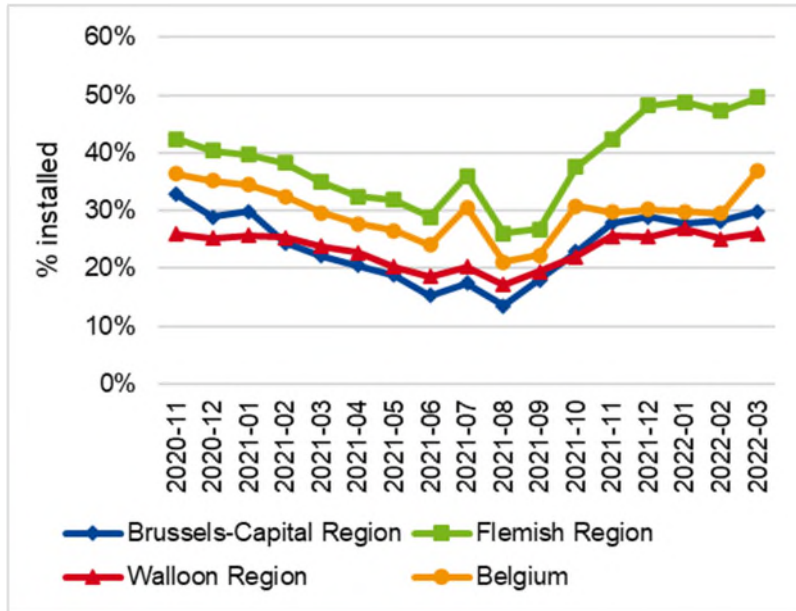
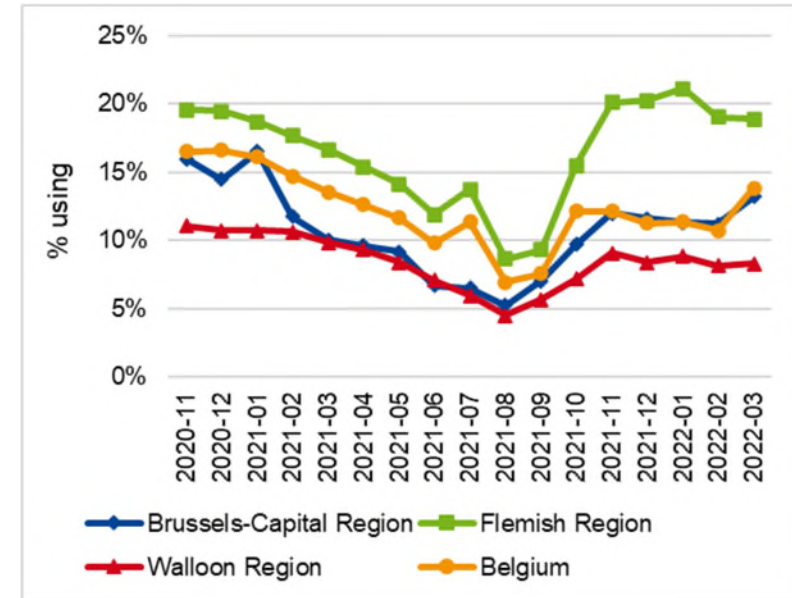


Figure 5 – Proportion of contacted individuals who reported using the Coronalert app to alert contacts after the positive test



A similar trend was noticed in the proportion of contacted individuals (who accepted to answer additional questions) who reported using the application to alert contacts after the positive test (Figure 5). This proportion was 16.5% in November 2021, reached a minimum of 6.9% in August 2021 and was 13.9% in March 2022. This percentage was also higher in Flanders (close to 20% at the end of the study period) than in Wallonia (maximum 11.1%) and Brussels (maximum 15.9%).

The Coronalert app was mainly installed (Figure 6) and used (Figure 7) by persons aged between 18 and 66 years. However, even in that group, the installation rate did not reach the threshold of 50%. and less than 20% used it to alert contacts in case of a positive test.



Figure 6 – Proportion of contacted individuals who have installed the Coronalert app, by age groups

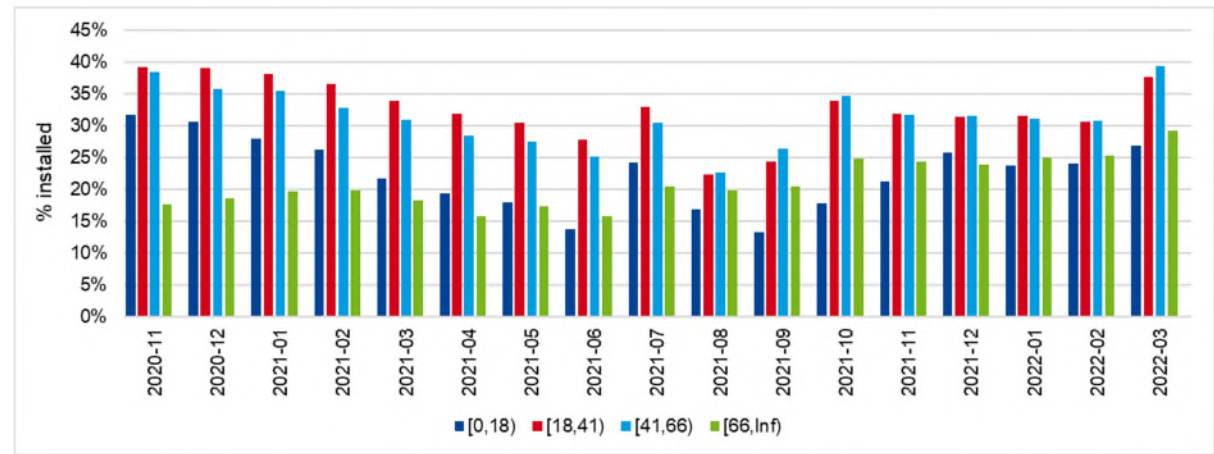
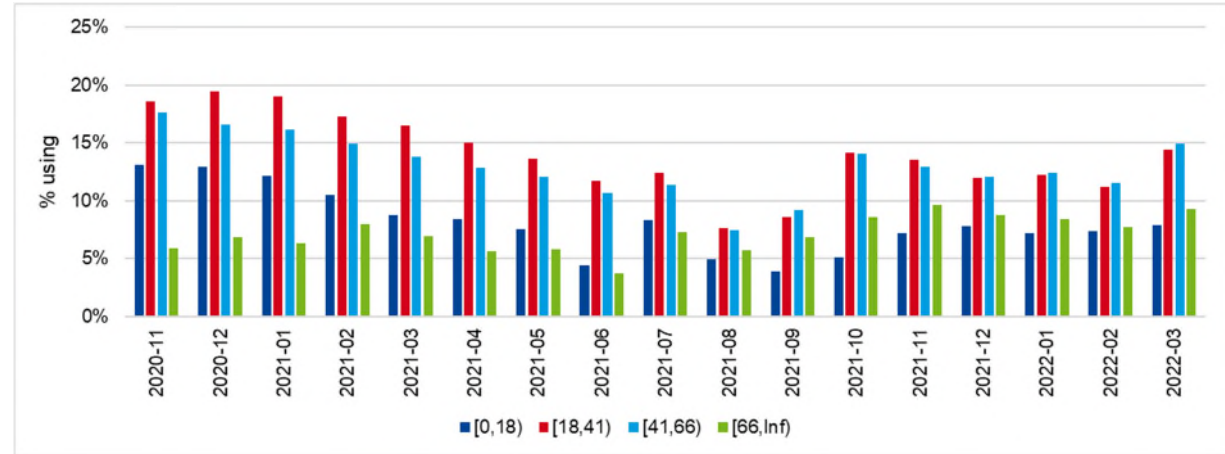


Figure 7 – Proportion of contacted individuals who reported using the Coronalert app to alert contacts after the positive test, by age groups





### Key points

- **During most of the study period (September 2020 – October 2021) the average duration between result and contact tracing initiation was shorter than 1 day in all three regions of Belgium. No data were available before September 2020.**
- **The duration between result and contact tracing was highest at the beginning of the study period (September-October 2020), when a high number of persons needed to be contacted (second COVID-19 wave).**
- **Overall, the proportion of individuals with positive test result contacted within 24 and 48 hours after the test result were high for long periods of time (above 80% and close to 100% respectively).**
- **The proportion of contacted persons (who accepted to answer additional questions) who had installed the Coronalert app was below 50% in all regions.**
- **The proportion of contacted individuals (who accepted to answer additional questions) who reported using the application to alert contacts after the positive varied between 7% and 17% in Belgium.**

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