The effectiveness of aircraft contact detection with COVID-19 and the risk of transmission in the aircraft.

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Preface

In the context of contact investigation at COVID-19, aircraft contact tracing[1] took place in the Netherlands from February 2020.

Suspected transmission of COVID-19 in the aircraft has been described several times. However, little is known from the literature about the benefits of aircraft contact research and the risk of transmission in an aircraft.

There are 4 studies of aircraft contact tracing with the purpose to look if transmission is possible in a arircraft. The conclusion that can be drawn in the 4 different studies of Eldin[2], Chen[3], Schwartz[4] and Vogt[5] is that the transmission probability of Covid-19 in the aircraft is small. In the studies of Chen[3], Vogt[4] and Schwartz[4], the aircraft contacts were precisely followed. The question of these studies was whether transmission was possible during flight, or via aerosols or via droplet infection. The fellow passengers were identified, followed or described and, if necessary, tested if they developed complaints. In the 4 studies hardly any secondary infections occurred, with a contagious fellow passenger as the source. To investigate this in the Netherlands, we looked at aircraft contact tracing data and investigated how many close aircraft contacts in the Netherlands tested positive for COVID-19 within 2 weeks after the flight, the maximum incubation period.

Source and contact investigation

282 passengers were monitored. These persons have been followed after they had travelled by plane and have been sitting in two rows before , after or beside an person with Covid-19. If they developed complaints of COVID-19 they were asked to get tested for SARS-CoV-2.

From the 282 people , 5 Aircraft contacts were registered as COVID-19 case.11 people indicated that they had complaints during the monitoring period. When inquiring about the test results of these 11, 6 were tested negative, of 2 it is impossible to determine whether they had been tested, and 3 were positive. So in total there were 8 positive contacts.

The local Public Health Departments have contacted by telephone the 8 positively tested persons to investigate the likelihood that they received COVID-19 through transmission in the aircraft. Of 3 contacts the incubation period was too short: 2 contacts had the first day of illness on the same day as the day of the flight, and in 1 was the first day of illness before the flight.

One person probably did not have transmission in the aircraft. He had a travel partner as the most likely source. He was in close contact with this several days before the flight, as well as during and after the flight. This travel partner developed complaints 1 day after the flight and tested positive for Covid-19.

4 People may have been infected in the aircraft, 3 symptomatic cases and 1 asymptomatic case. The time between the first day of illness and the flight was 2, 6 and 7 days. This is a percentage of 1.4%. The asymptomatic contact was tested positive 7 days after the flight and developed no complaints in the 72 hours after the test. The 4 positive cases could not identify other possible sources of infection.

Conclusion:

Of the 282 fully monitored aircraft contacts residing in the Netherlands, 4 contacts tested positive that may have been infected in the aircraft. These people could also have been infected outside the

plane. As aircraft contact tracing requires a lot of resources and is time consuming, questions rise about the benefits of this exercise for public health and the cost/benefit rate in general.

We hebben berichten ontvangen dat meer landen vliegtuigcontacten en het risico op transmissie in het vliegtuig onderzoeken. We hebben recent van Spanje een schrijven ontvangen waarin zij concluderen dat er een lage kans op transmissie is in het vliegtuig.

We hebben meer onderzoek nodig om op basis van onderzoek tot een beleid te komen om de pandemie te bestrijden.

Sources

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