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Letter to the Editor

Outcomes of asymptomatic hospital employees in COVID-19 post-exposure quarantine during the second pandemic wave in Zurich



Sir,

During this COVID-19 pandemic, the ultimate goal of prevention has been the subject of various, previously unknown, administrative recommendations [1,2]. After the first pandemic wave in spring 2020, health authorities started to promote contact tracing by imposing post-exposure quarantine for all adults after a close contact to laboratory-confirmed COVID-19 cases, independently of the individual setting. Since then, people with permanent exposure, e.g. living in the same household, or hospital employees with a transient, unprotected contact (e.g. in a restaurant) are routinely quarantined for 5–14 days. However, there are no real-life evaluations regarding the benefit of quarantining hospital employees, while staff poverty serves as an argument to strengthen the measures against the pandemic [3–6].

The Balgrist University Hospital in Zurich, Switzerland, is a tertiary centre for orthopaedic surgery, rheumatology, paraplegic patients and neuro-urology with 1250 employees [2]. We investigated the outcome of quarantined employees and arbitrarily limited our study period to the three most intensive months of the second pandemic wave between October 1st, 2020 and December 31st, 2020 in Zurich. As the primary outcome, the risk for symptomatic COVID-19 during and after the 10 days of quarantine was investigated, and the risks according to the nature of the exposure were stratified. We distinguished between a permanent or iterative exposure, e.g. in the same family, and a transient, single exposure. As a secondary outcome, the loss of work-days was estimated. COVID-19 was confirmed by polymerase chain reaction (PCR). Swiss authorities defined a 'close contact' as any unprotected exposure of >15 min (or directly to respiratory secretions) or within <1.5 m occurring within the last two days before the first symptoms.

All asymptomatic employees with close and unprotected contact with a confirmed COVID-19 case were sent home for 10 days of quarantine. We contacted them regularly by phone. In the case of secondary, symptomatic COVID-19 disease with a corresponding PCR result, we were informed. The Human

Resources, Occupational Medicine, and Infection Control departments established databases that were used for this study (Ethical Committee; BASEC 2021-00119).

In all, 376 symptomatic episodes among 337 different employees were investigated for COVID-19 (101 males; median age: 37 years (range: 18–63); 11 immune-suppressed) and quarantine was ordered for 81 asymptomatic cases. Among all these 81 asymptomatic quarantines waiting at home, only 10 (12%) became symptomatic for COVID-19 disease after a median of 5 quarantine-days (range: 3–11). Among all 94 COVID-positive episodes (nosocomial and community-acquired; 25%) overall, the proportion of those with prior asymptomatic quarantine was 11% (10/94 cases). All post-quarantine COVID-19 cases reported a prior permanent exposure occurring during: family life ($N = 6$), repetitive basketball matches ($N = 1$), spending the evening with friends at home ($N = 1$), and regular meals with colleagues at work ($N = 2$). In this subgroup of permanent exposures, the risk of symptomatic COVID-19 was high (10/22; 45%). By contrast, no employees with transient exposure reportedly developed symptoms. The quarantine led to an estimated loss of 810 full workdays within three months; or 710 working days among those who remained healthy. The majority of our employees could not work at home (Figure 1).

During the peak of the second pandemic wave in Zurich, only 12% of our hospital employees sent for post-exposure quarantine developed a symptomatic COVID-19 infection, whereas 88% of them simply waited at home. The proportion of COVID-19 episodes for which a quarantine was discussed represented only 11% of all COVID-19 cases. Two types of exposure histories should be distinguished: transient and permanent exposure. Hospital employees with permanent or iterative exposure, e.g. in the family, may have a higher risk (up to 45%). It makes sense that they stay at home. By contrast, there seems to be no argument in favour of quarantining employees with a unique exposure. The costs for these quarantines were high, both in terms of money and the lack of work force [1]. With data from this study, we conclude that the decision for quarantine orders should be based on the duration and nature of exposure.

In the literature, little is known about the objective benefit of post-exposure COVID-19 quarantine among asymptomatic adults. For example, probably only 0.4% of all travellers returning to Switzerland from designated 'quarantine countries' develop symptoms after their arrival [7]. This specific risk was 0.6% for travellers arriving in Bahrain [3], 2% among healthcare workers in Saudi Arabia, or 16% among university students with high-risk contact in Kentucky [4,6]. Our practice-based evaluation study has two major limitations: (i) there was

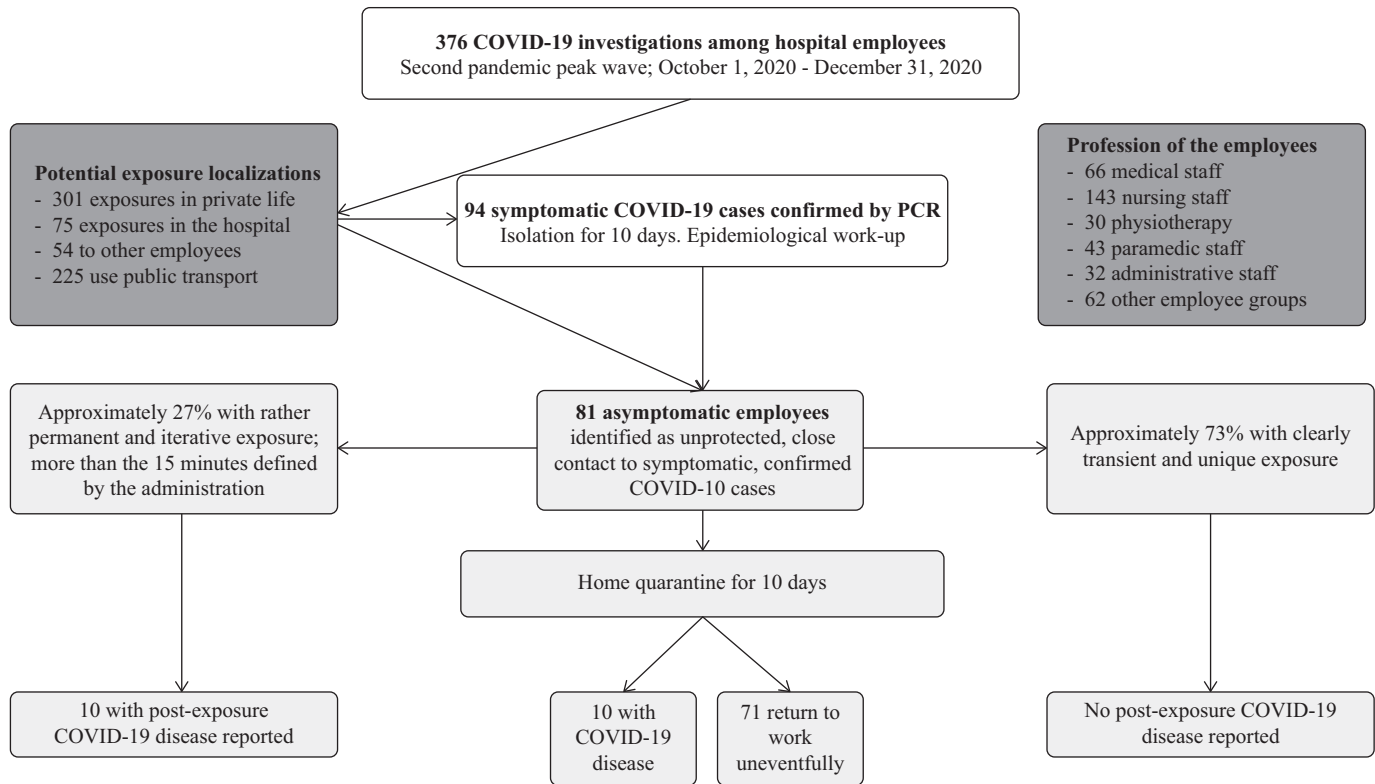


Figure 1. Flow chart of the COVID-19 investigations and quarantine among hospital employees, Balgrist University Hospital, October 1st to December 31st, 2020.

no testing on asymptomatic persons, since a negative result did not shorten the quarantine; (ii) our study only concerns the period of the second peak wave and targets the employees of a tertiary hospital with no dedicated COVID-19 wards [1,2]. Our findings cannot be generalized. Possibly, the medical knowledge among hospital employees is higher than in the general population, allowing a more efficacious prevention.

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Conflict of interest statement

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