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Respiratory healthcare professionals' views on long-term recommendations of interventions to prevent acute respiratory illnesses after the COVID-19 pandemic

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To the Editor:

During the COVID-19 pandemic, healthcare authorities adopted measures to reduce the spread of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). These were lockdowns, social distancing, using facemasks and increased hand sanitising. People with chronic respiratory conditions were encouraged to comply with these measures [1]. Furthermore, it was suggested that nebulisation may facilitate the transmission of COVID-19 [2, 3]; therefore, respiratory societies recommended using inhalers where appropriate [2, 4, 5]. During 2020, significant reductions in the incidences of acute respiratory illnesses including influenza [6–8] and acute exacerbations of chronic airway diseases [9–11] were reported. These reductions may be attributed to the effects of the measures implemented for COVID-19 prevention. It is undetermined whether these measures should be extended to prevent acute respiratory illnesses in the future, when the threat of COVID-19 has lifted.

To obtain respiratory professionals' views, we conducted an online anonymous survey (<https://www.surveymonkey.com/r/T6B3HS2>) regarding recommending continued measures to reduce respiratory illnesses after the end of the COVID-19 pandemic. The survey asked respondents under which conditions they would recommend wearing a facemask (indoors, on flights and at airports, in crowded places, in places of concentrations of patients, and/or during physiotherapy). It also specified three groups of people to adopt continued hygiene measures: 1) patients with a chronic lung disease; 2) patients with conditions associated with COVID-19 adverse outcomes (cardiovascular disease, diabetes and overweight) [12]; and 3) immune-suppressed individuals. We also asked about circumstances under which using inhalers should be preferred over nebulisers to prevent aerosolisation. Respondents were asked to choose their answers from a Likert-type scale of strongly agree/agree/neither agree nor disagree/disagree/not relevant to my occupation, with given statements.

The survey was promoted in the European Respiratory Society (ERS) Newsletter and by e-mail to members of ERS assemblies (Airway Diseases, Interstitial Lung Disease, Paediatric Respiratory Diseases, Pulmonary Vascular Diseases, Respiratory Infections and Thoracic Oncology assemblies). It was available between 19 July and 31 October 2021.

Results were analysed using IBM statistics SPSS version 24. Recommendations for infection control measures were compared between the physician's seniority and physician's specialisation using the Chi-squared test or Fisher exact test, as appropriate. Variables with more than two categories were evaluated with pairwise comparisons followed by Bonferonni correction. The McNemar test was used to determine whether there were differences between the recommendations to use facemasks or hand sanitising and the recommendation for social isolation. A p-value <0.05 was considered statistically significant.

320 respiratory professionals answered the survey. 73% of them self-identified as pulmonology specialists, 24% as paediatric pulmonologists and the rest as nurse practitioners in respiratory medicine. 70% treated mostly adults, 24% mostly children and 6% both adults and children. Among physicians, 59% had



Shareable abstract (@ERSpublications)

Respiratory professionals support the continuing use of protective measures for respiratory patients following the #COVID19 pandemic. The optimal use of these measures should be considered in clinical guidelines and public health recommendations. <https://bit.ly/3IVL2pQ>

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experience of >15 years, 26% 5–15 years, 12% ≤5 years and 3% were in training. 62% worked in a hospital, 18% in a clinic and 20% in integrated (inpatient and outpatient) care. Professionals from 65 countries answered the survey, mostly from the UK (11%), Israel (10%), Australia (7%), Italy (6%), and Germany (5%).

Recommendations to wear facemasks was agreed/strongly agreed (combined) to by 307 (96%) in places where ill people are concentrating, such as clinic waiting rooms; 298 (95%) on flights and in airports; 292 (91%) in other crowded places (like buses, concert halls and prayer houses); 288 (90%) at concentrations of respiratory patients (physiotherapy or pulmonary rehabilitation centres); and 215 (68%) indoors. Replies from adult and paediatric pulmonologists were similar except for the recommendation to wear a mask on flights (agreed/strongly agreed: adult pulmonologists 195 (95%) out of 201 (97%); paediatric pulmonologists 59 (88%) out of 67 (p=0.009)).

We further asked which group of people to whom respondents would recommend continuing sanitation measures. This item considered a) wearing facemasks, b) disinfection of hands and c) continuing partial social isolation. Examples given were avoiding the use of public transportation and attending movie theatres or concert halls. The majority of respondents strongly agreed or agreed that they would recommend these measures to the following: 1) patients with conditions or medications that cause immunosuppression (a) 300 (94%), b) 285 (90%) and c) 238(74%); 2) patients with a chronic lung disease (a) 295 (93%), b) 275 (87%) and c) 189 (60%), respectively); 3) patients at high risk for COVID-19 such as those with a cardiovascular disease (a) 268 (85%), b) 264 (83%) and c) 184 (58%).

When we compared the recommendations for different infection control measures (defining a recommendation as a “strongly agreed” response), recommendations for wearing facemasks and hand disinfection were significantly more likely to be endorsed in comparison to continuing partial social isolation (p<0.0001 in all disease groups) (figure 1).

Regarding circumstances in which using inhalers are preferred over nebulisers, most respondents strongly agreed or agreed to recommend use of inhalers in inpatient wards (n=213, 68%), in emergency departments (n=209, 66%) and in patients’ homes with shared rooms (n=182,58%) but not in the patients’ homes with separate rooms and open windows (n=128, 41%).

The overall results did not change when comparing with different years of experience, by stratifying physician’s seniority with >15 years’ experience *versus* all others (residents, specialists with ≤5 years’ experience and specialists with 5–15 years’ experience). The only statistical difference was by looking at the “strongly agree” group *versus* all others (agree, neither agree nor disagree and disagree) where 126 (72%) of the more experienced respondents recommended wearing a facemask for physiotherapy, as opposed to 68 (57%) of the less experienced respondents (p=0.006).

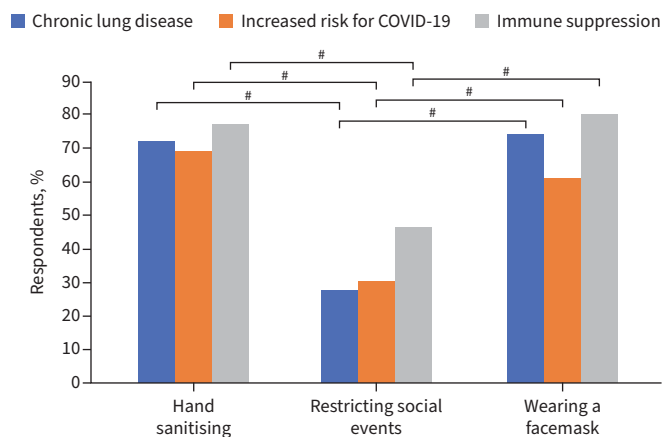


FIGURE 1 Comparison between different infection control measures in various health conditions based on respiratory healthcare professionals’ survey recommendations. The vertical axis represents the percentage of respondents who strongly agree to continuing the measure on horizontal axis after the end of COVID-19. #: p<0.0001 for comparison.

We have demonstrated that most respiratory physicians recommend adopting some of the measures that were originally taken to reduce the spread of COVID-19 after the end of the pandemic. Continued social isolation was significantly less likely to be recommended in comparison to wearing facemasks and hand disinfection ($p < 0.0001$), probably due to consideration of the emotional consequences of social isolation. The COVID-19 pandemic is entering its third year at the time of writing and it is therefore possible that, while the survey asked about recommendations to prevent non-COVID-19 illness, some of the respondents' reasoning may be the expectation that COVID-19 may become endemic and the restrictions may be required to prevent COVID-19 as well as other illnesses.

There is growing literature on the impact of personal protective measures on the transmissibility of SARS-CoV-2 and other respiratory infections [13]. Transmission of viruses is reduced with physical distancing [14] and using facemasks was associated with reductions in infections [14, 15]. A meta-analysis that included eight studies found a reduction in the incidence of COVID-19 with handwashing, mask wearing and physical distancing [16]. Hand sanitising was found to be effective in reducing transmission of non-COVID-19 acute respiratory infections [13].

A recent online survey among people living with respiratory diseases by the Asthma UK–British Lung Foundation Partnership has shown good acceptability of increased handwashing (79.5%) and social distancing (68.6%), and less acceptability for wearing facemasks in indoor public places such as public transport (45.7%) [17]. These findings in patients and our findings in professionals are in contrast with pre-COVID-19 conventions. A summary of recommendations for travelling with bronchiectasis developed through a collaboration between patients and respiratory specialists did not support the use of a facemask during air travel due to inconvenience and concern of the associated stigma [18]. Our results and those of others suggest that physicians and patients have changed their views concerning this precaution, not only for the COVID-19 pandemic but thereafter.

Our survey was conducted online for a few months in the second half of 2021, so there was representation of recommendations that varied within and between countries, and over time, but we acknowledge these findings do not take into account any change in attitudes that may accompany the emergence of the more transmissible but less severe omicron variant. Another limitation is that some respondents could interpret the questions in different ways, which could influence the results. Moreover, we did not address seasonal risks and how attitudes may vary with regards to seasons, as the seasonality in acute infections changed considerably during the COVID-19 pandemic.

In summary, respiratory professionals support the continuing use of protective measures for respiratory patients following the COVID-19 pandemic. The optimal use of these measures should be considered in clinical guidelines and public health recommendations.

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