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Reply to Zuckerman and Saiman

From the Authors:

We are grateful for the opportunity of responding to the recently published letter by Zuckerman and Saiman. We thank them for their positive feedback about our work published earlier this year in the *Journal* (1) that highlights an area that has been controversial following the publication of the updated Cystic Fibrosis Foundation infection control guidelines (2–4).

As highlighted by Zuckerman and Saiman, the methodology used with the validated aerosol collection rig published in several of our studies is tightly controlled (1, 5, 6). The movement of air within the rig (0.1 m/s) mimics that of a ventilated environment used in hospital wards and clinics. In an earlier work, Zuckerman and colleagues detected low air contamination rates during outpatient consultations but slightly higher rates with forced maneuvers such as spirometry (7). Nevertheless, both our current work and earlier studies (1, 6, 8) have shown that up to 75% of patients with cystic fibrosis (CF) and chronic *Pseudomonas aeruginosa* infection aerosolize viable bacteria within the respirable range ($<5\ \mu\text{m}$) during voluntarily coughing, thereby releasing potentially infectious aerosols into the air. A limitation of all studies using a cough model system is that the infectious dose of *P. aeruginosa* in people with CF is unknown, and therefore the amount of air that must be vented from air-conditioned rooms to remove the concentrations of aerosols containing live bacteria is also unknown (9). Although our laboratory-based studies have detected higher rates of viable aerosols than are observed in clinical settings, it is reassuring that face masks have demonstrated effectiveness at maximum testing with voluntary cough maneuvers. Regardless, the studies demonstrate evidence of potential airborne transmission as a mode of cross-infection within the hospital setting.

We agree with Zuckerman and Saiman that donning a mask in noncommunal areas (e.g., within outpatient consultation rooms and inpatient single rooms) is not required if sufficient time is allowed between patients for infectious aerosols to be removed from the air (9). Furthermore, talking has been shown to be a low-aerosol-producing activity compared with coughing (1), which may explain the low air contamination rates seen in outpatient consultation rooms (7). In their earlier work, Zuckerman and colleagues recommended allowing 30 minutes to elapse between visits by people with CF, particularly after the performance of spirometry, to clear the room of possible airborne contaminants (7). The period required will be dependent on the room volume and the rates of outdoor air exchange (9). Mask wear in noncommunal rooms may limit nonverbal communication cues, and as clinicians, we too are cognizant of the importance of fostering a long-term and collaborative relationship with our patients. Therefore, face masks will be most beneficial for people with CF in common (shared/communal) areas within the hospital setting, such as waiting areas, clinic and inpatient facility corridors, and the pharmacy department.

In a recent study, we found that masks were less comfortable for patients with CF than for healthy volunteers (10). However, surgical masks were tolerated by people with CF for up to 40 minutes of wear, and although there was a modest increase in the weight of the mask, such loading did not impact the mask's effectiveness. Further studies are required to better assess the effectiveness and tolerability of masks in children with CF. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

Michelle E. Wood, B.Phty.
The Prince Charles Hospital
Brisbane, Australia
QIMR Berghofer Medical Research Institute
Brisbane, Australia
and
University of Queensland
Brisbane, Australia

Rebecca E. Stockwell, B.Sc.(Hons.)
QIMR Berghofer Medical Research Institute
Brisbane, Australia
and
University of Queensland
Brisbane, Australia

Scott C. Bell, M.B. B.S., M.D.*
The Prince Charles Hospital
Brisbane, Australia
QIMR Berghofer Medical Research Institute
Brisbane, Australia
and
University of Queensland
Brisbane, Australia

ORCID IDs: 0000-0001-9026-7080 (M.E.W.); 0000-0002-0142-7458 (R.E.S.); 0000-0001-8651-7139 (S.C.B.).

*Corresponding author (e-mail: scott.bell@health.qld.gov.au).

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Erratum: Acute Respiratory Distress Syndrome Subphenotypes Respond Differently to Randomized Fluid Management Strategy

The authors of an article published in the February 1, 2017, issue of the *Journal* have identified an error. In Famous and colleagues (1), the terms identifying two different therapies, *fluid-conservative* and *fluid-liberal*, have been inadvertently exchanged for one another. This error affects Table 4 in the Results, three sentences in the Discussion, and four words in the abstract, as well as Table E7 in the supplement. All other analyses for the publication were rechecked by the authors and determined by them to be correct. Because of the nature of the changes, the *Journal* is replacing the online version of the article with one that contains the corrections. For the convenience of our readers, we are also posting a copy of the original article with all corrections indicated in red (this may be found in the supplemental materials tab of the online article).

The authors have determined that this error does not affect the main conclusions of the paper, namely, that two acute respiratory distress syndrome subphenotypes were identified in the FACTT study, that these two subphenotypes were similar to those previously identified by the same authors in other trials, that these two subphenotypes had widely divergent clinical outcomes, and that the two subphenotypes responded differently to fluid therapy. The authors take full responsibility for this error and apologize to the readership of the *Journal*. ■

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