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### **Authors' response**

We thank the authors of the letter<sup>1</sup> for going through our article and welcome the comments made. First, the authors have raised the appropriateness of including *Candida* as a pathogen for ventilator associated pneumonia (VAP), since it is extremely rare and lung biopsy is the only definitive method for diagnosis of *Candida* pneumonia. Earlier, the data from 24 investigations conducted with ventilated patients for a total of 1,689 episodes and 2,490 pathogens revealed *Candida* as an aetiological agent in 0.9 per cent<sup>2</sup> while in our study, it was 2.0 per cent (63 out of 3084 clinically suspected cases)<sup>3</sup> which may not be termed substantially high. We agree that the existing bronchoscopic or non-bronchoscopic specimens are not appropriate for diagnosis of *Candida* pneumonia and *Candida* recovered from such

samples signifies colonization. However, it has been found in several studies that it is not an innocuous colonizer and *Candida* trachea-bronchial colonization increases the risk for subsequent *Pseudomonas aeruginosa* VAP as well as the risk for infection with other multidrug resistant bacteria<sup>4-6</sup>. In view of this, it becomes necessary to report *Candida* biofilm infection in VAP patients irrespective of whether or not it is the aetiological agent of pneumonia. This is important since antifungal therapy could potentially reduce the risk for bacterial infection<sup>7</sup>.

Secondly, our study has revealed a high rate of VAP and similar observations have been made in other Indian studies as well, as mentioned in our article<sup>3</sup>. Our study has focussed on the profile of the pathogens rather than the patients. So it is understandable that we have not looked into the patient profile and the other co-morbid conditions and risk factors which can predispose to VAP. Finally, the authors have touched upon a very relevant aspect regarding the organizational setup in a hospital for the care of the critically ill patients, which include the patients on mechanical ventilation. Needless to say, our hospital like any other government referral hospital in India is overburdened with patients. The necessary nurse-to-patient ratio and other recommendations which have been formulated by the industrialized countries cannot be followed completely, the reason being multi-factorial. Educational component is a defining factor, since a great majority of nurses working in these intensive care units (ICU) may be without specialized training. In our hospital, the infection control committee takes the initiative to teach the nursing staff about the care of the critically ill patients on a periodic basis. The situation may be somewhat better in corporate hospitals with adequate staff and better infrastructure. Some of these also run their own diploma or certificate courses in critical care nursing, and the trained personnel are absorbed by them or other similar hospitals. The government of India has taken the initiative to introduce post-graduate residency programme (M.Sc) in Critical Care Nursing (Nurse Practitioner) as part of the National Health Policy, 2015<sup>8</sup> and the draft curriculum has already been prepared and endorsed by the Indian Nursing Council<sup>9</sup>. Such measure can slowly change the present

scenario, and it is expected that improved patient care will help in bringing down the unusually high VAP rates seen in the Indian setting.

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