Adherence to Evidence-Based Recommendations for Prevention of Ventilator-Associated Pneumonia: The Survey Says . . .

Ventilator-associated pneumonia (VAP) is the most frequent nosocomial infection in the intensive care unit;[1] between 10% and 20% of patients who receive more than 48 hours of mechanical ventilation will develop VAP.[1,2] VAP is associated with prolonged hospital stay,[3–5] higher cost,[6] and a 2-fold higher risk of mortality.[2]

Prevention of VAP is essential. Recent advances in our understanding of the pathogenesis of VAP have led to the development of effective strategies for prevention.[7] Several recent guidelines for the prevention of VAP have been published,[8–10] which recommend adoption of strategies found to be efficacious in randomized trials for reducing the incidence of VAP. It has become obvious, however, that such proof of efficacy, though necessary, is not sufficient for these measures to become part of clinical practice.[11]

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As the complexity and heterogeneity of effective strategies for implementing infection-prevention practices become apparent, much attention has focused on the factors that hinder the implementation of evidence-based guidelines into practice. Barriers must be identified and removed before evidence-based guidelines can be incorporated into clinical practice with the goal of improving patient care. Cook et al undertook an in-depth qualitative study pertaining to semi-recumbent positioning for VAP; they identified a number of cognitive, behavioral, and administrative factors that influenced the adoption and implementation of a seemingly simple maneuver, semi-recumbent positioning for VAP prevention.[12]

Though a number of studies have been undertaken to assess *physician* adherence to evidence-based guidelines for prevention of health-care-associated infections,[13–15] few have addressed this question in nonphysician health care providers who play a pivotal role in patient care.[16,17]

In this issue of RESPIRATORY CARE, Kaynar and colleagues report the results of a multicenter cross-sectional survey administered to respiratory therapists (RTs) and nurses (RNs) working in the intensive care unit setting.[18] The surveys were administered during departmental staff meetings and professional meetings and were collected immediately or were mailed in by the respondents subsequently.

The main purpose of the study was to determine self-reported adherence to evidence-based practices for non-pharmacologic-based interventions to prevent VAP. Of the 325 surveys administered, 278 individuals responded, for a response rate of 85%; the majority of the respondents who completed the surveys were health care practitioners who had been in practice for more than 20 years.

Overall, Kaynar et al found that the majority of RNs and RTs reported adhering to effective practices, such as hand hygiene, semi-recumbent positioning, and avoidance of unnecessary reintubation; the adherence rates ranged from 81% to 97%. However, almost half of the RTs reported that they continued to perform routine changes of ventilator circuits, a prevention strategy that has been found to be ineffective and is not recommended in recent guidelines. Similarly, 54% of RTs and 70% of RNs reported the use of chest physiotherapy, another ineffective prevention strategy. Among RTs, when responses were stratified by practice setting (academic or nonacademic), the authors found that RTs in academic settings were less likely to adhere to ineffective practices, such as changing ventilator circuits routinely. The survey did not attempt to discover the reasons behind high adherence rates to ineffective practices.

Another major finding of the study by Kaynar et al[18] is that 38% of the respondents were not aware of the VAP rate in their institutions. Awareness of the VAP rate may serve as an incentive for implementing measures to prevent VAP, particularly if periodic feedback is provided to health care workers regarding the impact of consistently applied preventive strategies on the incidence of VAP.

Kaynar et al attempted to delve into the reasons for nonadherence to effective practices. Unfortunately, the survey design did not permit a good understanding of the barriers to adherence; the most commonly cited reason for nonadherence was "other." Qualitative research on this subject may offer more insight into the factors that influence adoption and implementation of evidence-based practices.

The results of the Kaynar et al study should be interpreted in the context of its limitations. A major concern with any survey is how the questions were framed and asked. Careful crafting of survey questions is key to obtaining accurate, reliable, and valid responses. Pilot testing

of the survey can be invaluable in this regard in that it can identify ambiguous questions and problems with comprehension and interpretation. Though Kaynar et al obtained feedback from colleagues regarding the wording of the survey, a pilot study of the survey was not undertaken. They also do not mention whether there were any missing data in the completed surveys, or if so how this was handled in the analysis. The time frame of the survey was not reported; this is relevant because it may take considerable time for evidence-based recommendations that appear in guidelines to disseminate to health care providers. Finally, it is important to note that this study assessed self-reported practices and adherence rather than actual practices, and there may exist a lack of correspondence between self-reported practices and actual performance.

These limitations notwithstanding, the results of this survey confirm that although reported rates of adherence to evidence-based recommendations for prevention of VAP are high, much work still remains in understanding and overcoming obstacles to implementation of evidence-based practices proven to be effective, and discontinuation of practices that have been found to be ineffective. Future studies should specifically address this important issue, to allow optimal allocation of already constrained resources for infection control.

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