hours of the day. Our experience suggests that after-hours exposures are often managed in emergency rooms or stand-alone clinics, and physicians in these settings may be less familiar with the approaches to exposure management and pharmacologic agents for prophylaxis.

Finally, we agree with Tan et al[1] that medication cost is an important consideration, and the guidelines indicate that a more cost-efficient alternative to RAL may be required.[2] Individual facilities should consider undertaking comparative cost-benefit analyses—emphasizing factors that improve PEP adherence and minimize toxicities—when updating institutional PEP policies and protocols. The guidelines list several alternative medications for PEP regimens.[2]

Other experts are in agreement with PHS on a preference for RAL-based occupational PEP.[7] Given the limited data available on PEP administration, efficacy, and failures, some experts may disagree, and reasonable arguments can be made to support different conclusions. We echo the call for publication of relevant PEP data to inform regimen decisions. While such data are unlikely to coalesce around a single optimal regimen, electronic publication of this guideline is intended to allow for prompt updates when additional data become available.

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Factors Associated with Hand Hygiene Compliance among Critical Care Nurses

To the Editor—We read with great interest the article by Kowitt et al[1] that investigated the factors associated with hand hygiene compliance at a teaching hospital. In this study, they showed that the significant differences in compliance were noted between different professions. The compliance of hand hygiene was higher among nursing staff (84%) than among physician staff (78%) and support staff (69%). However, we wonder whether there would be other factors—such as age, sex, education, length of employment, and experience in health care—affecting hand hygiene compliance even within the same profession. Therefore, we conducted a study to investigate the possible factors associated with hand hygiene compliance among critical care nurses.

This study was carried out in 5 intensive care units (ICUs) at regional teaching hospitals. There were 63 adult ICU beds, and 150 critical care nurses were employed in the ICU. Compliance was defined as the frequency of the number of performed actions to the number of hand hygiene opportunities. Observation of hand hygiene compliance was carried out by trained members of the nursing department. Between October 1 and October 14, 2013, the compliance with hand hygiene (World Health Organization's 5 Moments for Hand Hygiene) among critical care nurses was observed. Ethics approval was obtained from the institution review board of Chi Mei Medical Center. Comparisons between each variable/cat-

TABLE 1. Factors Associated with Hand Hygiene Compliance

Variables	No. of observations	Compliance (%)	*P*
Age, years			**.001**
<30	521	54.7	
≥30 years	238	67.2	
Sex			**.004**
Male	53	39.6	
Female	706	60.1	
Education			.28
College	74	52.7	
University	685	59.3	
Experience in critical care, years			**.009**
<2	304	54.6	
2–5	233	55.8	
>5	222	67.1	
Team leader			**.01**
Yes	90	71.1	
No	669	57.0	
Ranking of RN			**.009**
RN1 + RN2	641	56.6	
RN3 + RN4	118	69.5	
ICU licensed nurse			**.001**
Yes	655	61.1	
No	104	43.3	
Location			**<.001**
Medical ICU	338	52.1	
Surgical ICU	193	54.4	
Respiratory care unit	228	71.9	

NOTE. ICU, intensive care unit; RN, registered nurse. Values in bold are statistically significant ($P < .05$).

egory were performed using a χ^2 test or 1-way ANOVA, as appropriate. All statistical analyses were conducted using the statistical package SPSS for Windows (ver. 19.0; SPSS), and $P < .05$ was considered statistically significant.

During the study period, a total of 759 hand hygiene opportunities were observed, with an overall compliance of 58.7%. The factors that may affect hand hygiene compliance are shown in Table 1. Age, sex, experience in critical care, ranking of registered nurse, ICU license, location, and presence of team leader significantly affected hand hygiene compliance (all $P < .05$). In contrast, education did not affect hand hygiene compliance.

This study found that hand hygiene compliance can vary according to age, experience, location, and ability among critical care nurses. Most of these variables can be attributed to the fact that senior critical care nurses with greater ability would have significantly higher hand hygiene compliance than junior members with less ability. This finding demonstrates that hand hygiene compliance is not the same for the same profession; however, this type of analysis is lacking in the study by Kowitt et al.[1] In conclusion, it suggests that more detailed factors should be taken into analysis while investigating the factors associated with hand hygiene compliance.

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