

and fear felt by the patient, provider, or healthcare team. In summary, although Dr Papadakis' concern for an unbalanced share of praise between the spiritual and the scientific is admirable and worth acknowledging, we encourage a more inclusive appraisal of the role of religion and spirituality in medicine and public health.

### Toward a culture of grace

In response to these observations, we propose transitioning from a “culture of blame” to a “culture of grace” in our profession. This culture is marked by an environment in which individuals and institutions are empowered to serve as inclusive agents of goodwill that seek to construct opportunities to promote human flourishing and restoration. Integral to this “culture of grace” is the practice of forgiveness. Given the nearly universal capacity to be wronged, whether individually or collectively, the opportunities for forgiveness in medicine and public health are extensive.<sup>10</sup> Forgiveness can be defined as the absence of ill will that is often accompanied by expressions of goodwill directed toward an individual, institution, or even toward oneself.<sup>10,11</sup>

As we gravitate away from the COVID-19 pandemic, failure to forgive and extend love to our neighbor may further the cycle of negativity, promote more division, and reinforce a “culture of blame” within medicine and the greater public. Individual- and group-level forgiveness interventions have been demonstrated to reduce depression, anxiety, and promote positive affect.<sup>11</sup> Interweaving forgiveness into discussions of medical error and negative outcomes amid the traditional expressions of responsibility and harm reduction may assist in ameliorating the stress and stigma associated with these outcomes. Particularly actionable for the healthcare professional, especially amid failure, is the practice of self-forgiveness. Practicing self-forgiveness can plant seeds of grace and mercy within, which, when collectively performed across an institution, can facilitate the blossoming of a redemptive, transformative environment that ameliorates medicine's “culture of blame.” Therefore, we propose the fostering of a “culture of grace” in our profession, one marked by forgiveness and upbuilding, inclusive healthcare.

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## Quantifying healthcare-acquired coronavirus disease 2019 (COVID-19) in hospitalized patients: A closer look

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*To the Editor*—We commend Trick et al<sup>1</sup> for their timely article examining the important topic of hospital-acquired coronavirus disease 2019 (COVID-19) during the pandemic. We wish to offer a few comments, particularly related to the methodology and conclusions of their study.

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First, the investigators categorically excluded all patients who tested positive for severe acute respiratory coronavirus virus 2 (SARS-CoV-2) within the first 5 days of hospitalization based on observational data early during the pandemic that found a mean (as well as a median) incubation period of ~5 days for COVID-19.<sup>2,3</sup> Unfortunately, with an incubation period as short as 1–2 days<sup>4,5</sup> and as many as 17.3% of patients developing symptoms <3 days after exposure,<sup>4</sup> a screening method that considers only patients who have tested positive for SARS-CoV-2 after 5 days of hospitalization undoubtedly runs the risk of underestimating the frequency of hospital-acquired COVID-19. Accordingly, patients

who might have become infected during the first 48–72 hours of hospital stay and had shorter incubation periods (associated with severe disease progression<sup>4</sup>) would have been automatically excluded from further chart review. Consideration of using fewer days of hospitalization as a screening criterion for hospital-acquired COVID-19 is particularly relevant today given the emergence of SARS-CoV-2 strains (eg,  $\alpha$ ,  $\beta$ ,  $\delta$ , and  $\omicron$ ) with shorter incubation periods compared to that of the original strain. More specifically, the most recent predominant SARS-CoV-2 strain,  $\omicron$  (omicron), appears to have a mean incubation period of only  $\sim 3$  days.<sup>5,6</sup>

It would have also been helpful for the authors to have provided additional pertinent demographic features (eg, immunocompromised status and other comorbidities associated with severe COVID-19) of patients who might have acquired COVID-19 during their hospitalization because the incubation period of COVID-19 may reflect not only pathogen-specific characteristics of SARS-CoV-2 but also host factors such as immunity.<sup>4</sup> This information would have been helpful in further characterizing the at-risk population for hospital-acquired COVID-19.

The authors also concluded that “hospital-acquired SARS-CoV-2 infection was uncommon” even though SARS-CoV-2 disease (ie, COVID-19), not infection, was the primary focus of the study as reflected by the title of the article and study case definitions.<sup>1</sup> Specifically, all SARS-CoV-2-positive patients with “onset during days 6–14” of hospitalization but without COVID-19 symptoms were automatically excluded from further consideration of acquisition in the hospital, whereas those diagnosed during the same period but with COVID-19 symptoms were considered hospital-acquired cases.<sup>1</sup> Furthermore, no patient without COVID-19 symptoms was classified as a “possible” hospital-acquired case unless testing was performed after 14 days of hospitalization. With an estimated 40%–45% of persons who test positive for SARS-CoV-2 considered asymptomatic at the time of testing,<sup>7</sup> a significant fraction of nosocomially transmitted SARS-CoV-2 infection or PCR-positive cases in this study might have gone undetected in the absence of reported symptoms that would have triggered testing by providers. Even among symptomatic patients, as stated by the authors, providers often preferentially ordered SARS-CoV-2 testing in those with more severe symptoms (eg, dyspnea or hypoxia) rather than those with milder symptoms.<sup>1</sup> For these reasons, we believe that no firm conclusion can be made on the frequency of hospital-acquired

SARS-CoV-2 infection or even mild COVID-19 cases based on the study methodology and the data presented.

Last, we fully agree that quantification of the risk of transmission of SARS-CoV-2 to hospitalized patients based solely on a set of predefined temporal criteria relative to the hospital day of onset of symptoms poses a challenge given the dynamic nature of SARS-CoV-2, as well as other factors, including the everchanging host and healthcare provider immunity.<sup>1</sup> However, just as the authors raise legitimate concerns over misclassification of community-acquired cases as hospital-acquired, the converse should also be equally acknowledged. To this end, given the current state of COVID-19 and in the absence of simpler methods for distinguish community from hospital-acquired disease, we believe that a manual chart review of all newly diagnosed COVID-19 cases in hospitalized patients should be considered to quantify the burden of hospital-acquired COVID-19 more accurately.

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## Author response: Quantifying healthcare-acquired coronavirus disease 2019 (COVID-19) in hospitalized patients: A closer look

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