

the daily requirement—showed depressive behavior. Therefore we chose to divide magnesium intake into quintiles to explore the possibility that an association might be seen only in those consuming much less than the estimated average requirement. Sluimers and colleagues are correct that dietary recall is not a perfect marker of hypomagnesemia. That the association is still significant despite the variation introduced by recall methods supports its robustness. Further, intake is amenable to intervention by patients, providers, and policymakers, making it an especially valuable target of analysis.

We agree that social and medical factors are stronger correlates of depression than magnesium intake, as Table 2 (p. 253) shows. We included these variables in the multivariate analysis to explore the possibility that they confound the association of magnesium intake and depression, as suggested by the correspondents.³ That magnesium intake remains significantly associated with depression in the models argues against confounding by these variables. Of course, residual confounding by unmeasured variables is a possibility, which is why prospective randomized trials are needed. We acknowledge that the relationship between magnesium and depression may be bidirectional, and we can only report an association. However, our study adds to the overall body of literature in support of exploring this relationship further. Finally, we see no virtue in a nonrandomized prospective trial because any such study would be subject to the same biases the authors point out in their letter.

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doi: 10.3122/jabfm.2015.05.150194

Re: The Use of Medical Scribes in Health Care Settings: A Systematic Review and Future Directions

In the May/June issue of *Journal of the American Board of Family Medicine*, Shultz and Holmstrom¹ performed a systematic review of the literature investigating the effects of medical scribes on health care productivity, clinical quality, revenue, time efficiency, and patient-clinician interaction. We, at

the University of California, San Francisco, Center for Excellence in Primary Care, applaud this research and agree that with the uptake of electronic health records in medical practices across the United States, much of the documentation and administrative burden has shifted to primary care providers. Using medical scribes to document visit notes and enter orders during the patient visit is a promising approach to improve the patient-clinician encounter in the current era of electronic health records.

Medical scribing can be embedded among other activities, and clinical staff members who perform the scribing function are not always called “scribes.” The literature review by Shultz and Holmstrom¹ therefore excluded a few relevant publications that did not have the word *scribe* in the title or abstract. To this end, we found 4 additional studies that explored the effect of medical scribes in the clinical setting. One study used a team-based care approach that paired each clinician with 2 clinical assistants who consistently work together to care for their patients. The clinical assistants took responsibility for many of the patient care tasks, and scribed during the physician encounter. Anderson and Halley² found an increase physician productivity that resulted in increased income to offset the costs of the additional personnel and also improved patient and staff satisfaction. Another peer-reviewed study investigated the use of practice partners in 2 academic health center practices. Practice partners were also paired with physicians in a 2:1 ratio and performed scribing and other administrative functions, including assisting patients with the checkout process. Reuben et al³ found that the use of practice partners led to a reduction in physician time spent before and after sessions, shorter geriatric visits, and higher patient satisfaction.

In addition, 2 non-peer-reviewed studies of the use of medical scribes in primary care settings found improvements in clinician satisfaction; an increase in the accuracy of chart notes and productivity⁴; a decrease in no-show rates, cycle time, and staff cost per relative value unit; an increase in gross net revenue per visit; and improvements in clinical quality measures.⁵ Based on the findings from Shultz and Holmstrom¹ and the above additional literature, the variety of medical scribing and team documentation models can be divided in 2 broad categories: (1) the staff member accompanies the clinician during each patient visit and assists only with scribing and documentation, and (2) specially trained

clinical staff members accompany each patient through a larger portion of the visit cycle to provide care services in addition to documentation during the clinician encounter. Each of these models has been associated with positive findings in the literature.

Despite these positive findings, we agree that the number of studies of either scribing model is small and rife with limitations. We support the call for additional, methodologically rigorous, and sufficiently powered research on the use of medical scribes in the primary care setting. In the meantime, practices interested in exploring their own scribing models can use several online resources, including the StepsForward module developed by Christine Sinsky, MD, and the American Medical Association (<https://www.stepsforward.org/modules/team-documentation>) and an evaluation toolkit available from our website (<http://cepc.ucsf.edu/team-documentation-scribing>).

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doi: 10.3122/jabfm.2015.05.150184

The above letter was referred to the author of the article in question, who offers the following reply.

Response: Re: The Use of Medical Scribes in Health Care Settings: A Systematic Review and Future Directions

To the Editor: We thank Ms. Dubé¹ for her comments. While we agree that many professionals (and sometimes learners) may assist clinicians with documenting the clinical encounter, we contend that duties performed by medical scribes are categorically distinct and do not include the provision of patient care.² While we anticipate variability in the specific tasks performed by scribes—based on the health care setting, the medical specialty, a given scribe's training and/or licensure, and so on—patient care services such as those in the first 2 studies described by Ms Dubé are beyond that performed by scribes and therefore outside the scope of our review.

Ms. Dubé also referenced 2 studies not included in the peer-reviewed literature. While far from perfect, the purpose of peer review is to ensure that research meets a basic standard of rigor and quality. This said, we agree that findings reported within the non-peer-reviewed literature may help to move the science forward, and we welcome a corresponding review that summarizes this evidence.

The 2-part heuristic described by Ms Dubé is very interesting and invites the possibility that the scribe model may be appropriate for some settings, whereas another model combining documentation of the clinical encounter *and* the provision of patient care services may be better in other settings. We wholeheartedly support research investigating the efficacy of different models and welcome inquiry along these lines. As noted in our conclusion, we need more research to understand whether and how scribes help to improve (or hinder) the provision of care. Ms Dubé's thoughtful criticism of our review only underscores the need for more research on this topic, with the goal being improved health care productivity, quality, and outcomes.

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doi: 10.3122/jabfm.2015.05.150193