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(See the article by Shimokura et al, on pages 415—424.)

Does a little bit go a long way, as the old saying goes?

The origin of the saying “A little bit goes a long way” is unclear. The relevance of the application of this old saying to various settings and situations is equally unclear. Similarly, the relevance to clinical medicine is totally “uncharted territory.” In her 2001 hit song “A Little Bit,” the pop singer Jessica Simpson sings that “a little bit goes a long way,” but her lyrics also emphasize the need for “a little less talk and a little more do.” In my opinion, the latter statement, not the former, should become the mantra for the managers and owners of US ambulatory healthcare facilities with respect to infection prevention.

In this issue of the journal, Shimokura et al present their findings from a study that was designed to identify factors associated with the risk of hepatitis C virus (HCV) transmission in ambulatory dialysis centers. This important study identifies several practices that the authors found to be associated with the risk of healthcare-associated transmission of bloodborne pathogens in these centers. In the study, patient-care practices that were independently associated with a higher prevalence of HCV infection among dialysis patients included the reuse of priming receptacles from one patient to another without disinfection, staff members handling blood specimens immediately adjacent to medications and clean supplies, and the use of mobile carts to deliver injectable medications. Most experts would consider each of these practices to be inadvisable at best and substandard care at worst.

Bloodborne pathogen transmission has long been a concern of the hemodialysis community, and as early as the 1970s strategies were designed to prevent hepatitis B virus (HBV) transmission in these “blood-rich” environments. HBV transmission in the dialysis setting was the subject of intense scientific scrutiny in the pre-HBV-vaccine era. Similarly, over the past decade several studies have clearly documented the occurrence of HCV transmission to patients in the dialysis setting. Furthermore, dialysis patients have been shown to have a higher prevalence of HCV infection than the population at large. Previous investigations of the instances of dialysis-related transmission identified inadequate infection prevention procedures in the settings in which transmission occurred but did not identify specific practices associated with the risk of HCV transmission.

In my view, one of the most striking findings from the study by Shimokura et al is the astoundingly low level of adherence to what most of us would consider basic infection prevention strategies—virtually across the waterfront—in these dialysis centers. Interestingly, for the patients in these centers even low levels of adherence to basic infection prevention strategies were associated with decreased prevalences of HCV infection. In reading this interesting article, I was struck both by the basic infection control data and by the manner in which these data were analyzed. With respect to the analysis, for example, the cutoff for hand hygiene “success” was greater than 33% adherence, and the cutoff for “successful” changing of gloves between patients was greater than 41% of the time. Even though staff in these centers were made totally aware that observers were there to evaluate the workers’ adherence to infection control guidelines, more than 75% of centers exhibited less than 33% adherence to hand hygiene recommendations, and staff from more than 70% of the centers failed to change gloves more than 41% of the time between patients. Most strikingly, only 28% of the centers had staff who followed both the hand hygiene and glove-use recommendations more than 17% of the time! Interestingly, although not statistically significant, for each of these comparisons patients from institutions whose staff were (only slightly) more adherent to the recommendations had consistently lower prevalences of HCV infection—demonstrating that a little bit of infection prevention may actually go a long way while simultaneously underscoring the huge need for sweeping improvement in infection prevention procedures in these centers. Thus, from these data one might readily con-
clude that so many untoward actions were occurring in these settings that pinpointing which were the specific culprits in HCV transmission might be exceedingly difficult. One might well wonder what the impact on HCV prevalence might be of a dialysis center staff who were adherent to these simple recommendations more than 90% of the time.

One can easily argue that the relevance of the findings in this article is limited both by the cross-sectional design of the study and, perhaps even more importantly, by the fact that the data were collected nearly a decade ago. A substantial fraction of the data presented in the article was collected in 2001; preliminary findings from the study were initially presented at the annual meeting of the Society for Healthcare Epidemiology of America in 2005. Thus, the reader cannot be certain that this important landscape has not changed since that time. Clearly, stakeholders in outpatient dialysis programs can only hope that these findings have improved dramatically over the past 10 years.

Nonetheless, if these findings are in fact representative of current practices, they are of even more importance in light of the virtual explosion of new, independent ambulatory healthcare programs in the United States. Dialysis centers, infusion centers, ambulatory surgery centers, freestanding imaging centers, and acute-care "doc-in-a-box" centers are but a few examples of the rapidly changing landscape of outpatient clinical medicine in the United States. The numbers of such centers are expanding aggressively throughout the nation, and these facilities have substantially modified how health care is delivered in our country. According to data collected by the Centers for Disease Control and Prevention, the year 2009 witnessed more than 1 billion consumer visits to independent ambulatory care facilities in our country, and in fact the number of these visits is growing at a rate that substantially exceeds the growth of the US population. Furthermore, with the exception of ambulatory surgical centers, these ambulatory healthcare environments are much less "controlled," much less standardized, and far less regulated.

Outbreaks of infection related to inadequate or inappropriate infection control procedures in certain of these ambulatory settings have received national attention and have been associated with devastating outcomes, such as the recent report of hepatitis virus infections linked to an endoscopy clinic in Nevada. The Nevada experience is worth additional emphasis: in this iatrogenic outbreak, patient-to-patient HCV transmission likely resulted from contamination of single-use medication vials that were used for multiple patients during the administration of deep sedation. The epidemic resulted in the public health notification of nearly 50,000 potentially exposed healthcare consumers, and the investigation resulted in the largest consumer recall in US healthcare history and highlighted breaches in aseptic technique, deficiencies in administrative oversight of the clinic, and the barriers to investigating such outbreaks. Sufficient concern has been expressed about infection prevention procedures in certain ambulatory care settings that this subject became the focus of the second tier of the Department of Health and Human Services' action plan to prevent healthcare-associated infections. Given the findings of the study by Shimokura et al, such attention seems entirely warranted. The findings from their study should raise sufficient concern about infection prevention strategies in the expanding ambulatory healthcare venue to prompt a more aggressive, detailed, prospective, and systematic assessment of the use of these procedures and precautions in these settings. Furthermore—and perhaps more importantly—the study raises the issue of the need for more aggressive regulation in these venues.

The article by Shimokura et al suggests that, at least 10 years ago, the infection prevention strategies in use in ambulatory dialysis centers were far from optimal. If these data are still relevant—and if they are indeed generalizable to the other ambulatory healthcare delivery settings described above—they provide ominous evidence about the state of infection prevention efforts in such settings. Irrespective of one's views of Jessica Simpson or of contemporary pop music, the lyrics of this particular pop song have special relevance, especially in light of the virtual explosion of ambulatory healthcare in the United States. The time is indeed ripe for "a little less talk and a little more do" with respect to infection prevention interventions in ambulatory health care. Our patients deserve far more than a little bit.

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REFERENCES

