The Economics of Clostridium difficile–Associated Disease for Providers and Payers

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(See the article by Dubberke et al. on pages 497–504)

Outbreaks of Clostridium difficile–associated disease (CDAD), especially the hypervirulent North American pulsed field gel electrophoresis type 1 strain, have presented significant problems for patients, hospitals, long-term care facilities, and clinicians [1–3]. The important study by Dubberke et al. [4] in this issue of Clinical Infectious Diseases calls attention to the financial burden facing hospitals and, indirectly, to payers. As noted by Dubberke et al. [4], their findings are conservative, as we will discuss further.

Hospital practitioners should be aware that when a patient develops a nosocomial infection, particularly with a pathogen resistant to standard therapy, payer reimbursement likely fails to cover the increased cost of care that results [5]. We noted in a study more than a decade ago that the cost of CDAD could be among the most influential components of the cost of patients hospitalized with a serious infection and receiving potent antibiotic therapy [6].

The study at Barnes-Jewish Hospital [4] has several unique aspects. As an evaluation of nearly all patients admitted within calendar year 2003 (excluding surgical and short-term patients), it provides a large sample, so that prevalence as well as cost impact can be estimated. In addition to analyzing the index hospitalization for each patient as well as for the cohort, the study also includes a 6-month follow-up. This is of increasing importance, because the recurrence rate for CDAD is problematic [7].

With use of fairly sophisticated statistical techniques in 2 complementary analyses, the attributable cost of CDAD found by Dubberke et al. [4] would be $2,500–$3,500 in current (2007) costs for the index hospitalization. This figure is quite conservative, given the fact that patients who had a surgical procedure at any time during the hospitalization were excluded. Moreover, the patients were treated in 2003, which is near the beginning of the emergence of the North American pulsed field gel electrophoresis type 1 strain [3]. The strain, known to be associated with more colectomies, increased morbidity and mortality [1, 2, 8], is now more prevalent, with a likely increased economic burden. In addition, the unmatched patients (and therefore excluded from the study) in their case-control analysis [4] tended to be the more costly patients. Because no controls were found for some patients, we can only speculate, as noted properly by Dubberke et al. [4], that had those patients been matched, the attributable cost of CDAD would be even higher.

Dubberke et al. [4] have contributed much in the way of useful information. It is commendable that patients were observed for 180 days. However, the economic interpretation is unclear. Under typical diagnostic-related-group-based payer systems, a rehospitalization (after a specific minimum number of days) would engender a full diagnostic-related-group reimbursement. It is here that their study would benefit from traditional health economic methodology [9]. Specifically, establishing the study’s perspective [10] was not stated. The index hospitalization would be most appropriately analyzed under a hospital-provider perspective. Indeed, because direct medical costs were considered, the study effectively did take this perspective. The same perspective would be valid for the rehospitalization, because the hospital would receive reimbursement for a new event.

However, more information could have been developed had the authors conducted the follow-up period from a payer or managed care perspective. This would have required consideration of outpatient health care resources used during that time (as noted by the authors [4]). And for reasons noted above, the cost of the additional hospitalization is more perti-
The follow-up costs as reported [4] do not adequately reflect any real economic model to either a payer or provider for outpatient care or for rehospitalizations.

It is clear from this study of a large number of patients [4] that CDAD has significant economic consequences. It us our hope that other researchers will continue to analyze this disease and generate additional data.

Acknowledgments


References