An Economic Analysis: Is Fidaxomicin Worth the Cost?

To the Editor— We recognize the efforts by Bartsch et al [1] to evaluate fidaxomicin (DIFICID). The conclusions drawn by the authors, however, warrant reexamination in light of numerous clinical and methodological problems.

Clinically, the "all-or-none" treatment approach used in the decision model does not accurately represent real-world treatment patterns. The model assumes if a treatment fails, a second course will be effective, thus biasing the results toward a relatively ineffective first-line treatment.

The severity classification used by the authors also limits the applicability of this model and does not reflect Society for Healthcare Epidemiology of American/Infectious Diseases Society of America guidelines, nor does it provide a reliable way to classify patients at the onset of treatment [2].

Given the efficacy data in Table 1 [1], it should be mathematically impossible to derive the result that fidaxomicin is less effective. It seems likely that there is a typographical error in either the table or model calculations, or both.

The selection of a NAP1/BI/027 frequency of 50% considerably overestimates the burden of this strain of *C. difficile*. Current estimates of 22%–34% suggest that the prevalence of the BI strain is declining, with the United States likely experiencing a period of endemicity rather than epidemicity and outbreaks [3–5].

We also question the use of utility weights for noninfectious diarrhea (range, 0.817–0.92, Table 1 [1]) as a proxy for *C. difficile*–associated diarrhea (CDAD). The values in Table 1 present a situation where the utility for nonsevere disease (0.88) is higher than the baseline utility for patients aged ≥65 years (0.84). If this were true, a patient aged ≥65 could potentially have improved quality of life when experiencing an episode of nonsevere CDAD. Other potential, more appropriate utility probabilities can be found in the Tufts Cost-Effectiveness Analysis Registry [6]. Using inaccurate or widely disparate utility values can significantly magnify errors in output [7].

Finally, we draw attention to the independently conducted economic analysis of fidaxomicin vs vancomycin recently published by Stranges et al in *Value in Health* [8]. The two models share several efficacy and cost parameters, the inputs for which vary substantially. The significantly different inputs, combined with a more appropriate clinical scenario, produced a very different cost per quality-adjusted life-year of $67 576, substantially lower than Bartsch et al's $43.7 million [1, 8].

We recognize the complexity of modeling treatment patterns in *C. difficile* infection; however, several inappropriate clinical and methodological assumptions significantly limit the value of this work.

Note

Potential conflicts of interest. All authors are current employees of Optimer Pharmaceuticals.

All authors have submitted the ICMJE Form for Disclosure of Potential Conflicts of Interest. Conflicts that the editors consider relevant to the content of the manuscript have been disclosed.

Hemal Shah, Joseph J. Doyle, and Daniel A. Belletti

Healthcare Economics, Quality and Outcomes, Optimer Pharmaceuticals, Inc, Jersey City, New Jersey

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Correspondence: Joseph Doyle, Healthcare Quality and Outcomes Liaisons, Healthcare Economics, Quality and Outcomes, Optimer Pharmaceuticals, Inc, 101 Hudson St, Ste 3501, Jersey City, NJ 07302 (jdoyle@optimerpharma.com).

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