To estimate the cost-effectiveness of Fecal Microbiota Transplant (FMT) for Clostridium difficile infection (CDI) as compared to current practice, we constructed a decision analytic model to compare strategies for the management of CDI, by age, gender, and three major subpopulations: hospitals, communities, and long-term care facilities (LTCFs). We performed validation analyses to demonstrate that the predicted CDI rates were a reasonable representation of the selected actual rates. Mortality rates were stratified by age. A probabilistic sensitivity analysis (PSA) was also performed to account for the effect of uncertainty in the model parameters.

Results: For the current practice, we estimated that annually 75% of CDI cases are new infections; the rest are recurrences; 40% of CDI occurs among those above 80; hospital-based CDI accounted for 49% of all CDI, while community and LTCF-based CDI accounted for 26% and 5% of all CDI, respectively. The recurrence rates for current antibiotic treatment were estimated at 25.3% and 35.9% for first and second recurrences, respectively. The recurrence rate for FMT was estimated at 10.4%. For the base case, mortality rates were lower for FMT than for current practice and were stratified by age. The number of deaths in estimation and validation was lower for FMT than for current practice.

Methods: We developed a decision analytic Monte Carlo computer simulation model to compare FMT to the current practice of antimicrobial treatment with Metronidazole and Vancomycin. The model was a Markov process, where individuals were stratified by age, gender, and the three subpopulations: hospitals, community, and LTCFs. We calculated transition probabilities, costs, utilities, and distributions parameters for each variable (Table 1). Transition probabilities were stratified by age, gender, and subpopulations (hospitals, community, LTCFs). We estimated that 70% of all CDI cases are new infections, and that 30% are recurrences. We estimated that 70% of all CDI cases are new infections, and that 30% are recurrences. We estimated that 70% of all CDI cases are new infections, and that 30% are recurrences. We estimated that 70% of all CDI cases are new infections, and that 30% are recurrences. We estimated that 70% of all CDI cases are new infections, and that 30% are recurrences.

Conclusions: The results of the cost-effectiveness analysis indicate that FMT appears to be the dominant strategy, with lower costs and better outcomes than the existing antibiotic treatments. FMT appears to be a rational, and acceptable treatment option for patients with recurrent CDI.