**ADDITIONAL SUPPLEMENTAL DIGITAL CONTENT**

**Insurance plan design**

We assumed that a patient as enrolled in a Health Management Organization managed care plan with a $30 prescription drug co-pay for a 30 day supply and a $0 annual premium. There are a variety of high-deductible health plan designs and individual health plans1 which incorporate cost-sharing (higher prescription drug and appointment co-pays, deductibles, and out-of-pocket maximums). The range of possible insurance designs was not modeled, noting that the patient perspective becomes similar to the insurer perspective with increasing cost-sharing.

**Explanation of RAND/UCLA expert consensus method**

Our method of model development was designed to optimize the model’s applicability to clinical practice in a manner which recognizes variable strength-of-evidence, gaps in knowledge, and areas of disagreement among gastroenterologists (**Supplement Table 1**). Survey data was managed using Dartmouth REDCap. A blinded electronic survey was distributed to participants to rate the appropriateness of proposed model inputs on a 9-point Likert scale (score of 1-3 [not appropriate], score of 4-6 [uncertain], score of 7-9 [appropriate]). A 90-minute video teleconference was held to discuss assumptions and inputs rated as ‘not appropriate’ by at least one participant or ‘uncertain’ by at least two participants (moderated by E.S.). A blinded post-meeting survey was then distributed with updated assumptions and inputs informed by group discussion, on which model assumptions and inputs were finalized based on convergence of expert opinions.

**Explanation of efficacy endpoints**

For linaclotide, plecanatide, and prucalopride, we used a responder definition of “*improvement in complete spontaneous bowel movements (CSBM) ≥1 per week with ≥3 CSBM per week for at least 75% of weeks in a 12-week trial of therapy*,” noting that plecanatide trials reported outcomes including an additional requirement of sustained response in the last 3 out of 4 weeks.2,3 Other clinical endpoints were assessed to evaluate robustness of model estimates, noting that these endpoints were not uniformly reported for all drugs in sensitivity analysis. Lubiprostone trials were shorter than other CIC drug trials, and lubiprostone trials were conducted before the addition of bowel movement completeness to clinical trial endpoints.4,5 Based on availability of data for lubiprostone, a less rigorous “*increase of ≥3 SBM (spontaneous bowel movement) per week averaged over 4 weeks compared to baseline*” endpointwas used and extrapolated over the course of the model in exploratory analysis.6

**Additional references for supplemental digital content**

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