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| **SUPPLEMENTARY METHODS** |

**Outcome: Incremental Costs as Determined ThroughProbabilistic Sensitivity Analyses**

The primary outcome was incremental cost between the intervention and baseline periods across all sites. We conducted Monte Carlo probabilistic sensitivity analyses and assumed that the emergency department (ED)/hospitalization and ED visit only probabilities followed a triangular distribution1 with base-case, minimum, and maximum values listed in **Table 2**. One-thousand trials were simulated, and for each trial, resampling of the probability estimates occurred after each Markov model cycle. Considering all 1,000 simulations, we determined the mean difference and standard deviation in costs between the intervention and baseline periods. We also calculated the percentage of trials showing that the interventions led to cost savings over usual care.

**Outcome: Budget Impact Analysis**

We also performed a budget impact analysis where incremental per-member per-month (PMPM) cost of the intervention versus baseline periods served as the outcome. To perform these calculations, we used an inflammatory bowel disease (IBD) prevalence of 1,300 per 100,000 patients2 and assumed the hypothetical managed care organization (MCO) had 1 million covered lives. We first calculated the average PMPM cost for each period by multiplying the average monthly cost per patient with IBD by the total number of patients with IBD in the hypothetical MCO and then dividing this value by the total number of paying members. To calculate the incremental PMPM cost between the intervention and baseline periods, we used the following expression:

$\frac{\begin{array}{c}average monthly cost for IBD patients in intervention period \\× number of IBD patients in MCO\\ \end{array}}{total number of paying members in MCO}- \frac{\begin{array}{c}-\\average monthly cost for IBD patients in baseline period \\× number of IBD patients in MCO \\ \end{array}}{total number of paying members in MCO}$

**References:**

1. Muennig P, Bounthavong M. Cost-effectiveness analysis in health: a practical approach: John Wiley & Sons; 2016.

2. Dahlhamer JM, Zammitti EP, Ward BW, et al. Prevalence of inflammatory bowel disease among adults aged ≥18 Years - United States, 2015. MMWR Morb Mortal Wkly Rep. 2016;65(42):1166-9.