**Additional File 1. Improvement in COPD disease factors in the model at time = 0.**

Description of the improvements in COPD disease factors built into the model at time 0 (i.e. the beginning of the cycle), when FEV1 benefit has been included.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Treatment** | **Starting FEV1(mL)** | **FEV1 absolute treatment effect (mL)** | **FEV % predicted** | **Dyspnea (no days)** | **Dyspnea (several days)** | **Dyspnea (most days)** | **Cough/sputum** | **6MWT distance (m)** | **SGRQ-C** |
| **UMEC/VI** | 1563 | +180 | +6.8% | +1.1% | +5.5% | −6.6% | −0.9% | +10.8 | −1.9 |
| **TIO/OLO** | 1563 | +128 | +4.8% | +0.7% | +3.8% | −4.5% | −0.6% | +8.1 | −1.6 |

COPD, chronic obstructive pulmonary disease; FEV1, forced expiratory volume in one second; SGRQ-C, St. George’s respiratory questionnaire for COPD patients;   
TIO/OLO, tiotropium/olodaterol; UMEC/VI, umeclidinium/vilanterol; 6MWT, 6-minute walking test.