**Appendix**

***Appendix A. Parameter Values, Treatment Cost Calculations, and Distributions***

Table A.1 details the input values used in the model and respective sources. Table A.2 shows ranges used in one-way sensitivity analysis and distributions used in probabilistic sensitivity analysis.

Table A.1. Parameters Used in the Model

| Parameter Description | Value | Source |
| --- | --- | --- |
| **Population Parameters** |
| U.S. adults 18 and older | 253,227,594 | U.S. Census Bureau, 2018 [4] |
| Resection rate | 36.9 per 100,000 | Myer et al., 2012 [3] |
| CEA tests  | SQ = 2.93 every 3 yearsLow = 1.63 every 3 years | Snyder et al., 2018 [2] |
| CT Scans | SQ = 2.24 every 3 yearsLow = 1.63 every 3 years | Snyder et al., 2018 [2] |
| **Probabilities and Fractions** |
| 5-year survival probability | 73.7 percent | Snyder et al., 2018 [2] |
| Fraction of patient’s missed work costs incurred by employer | 100 percent | Assumed |
| Fraction of patient’s visits accompanied by family caregiver  | 41 percent | Wolff & Roter, 2011 [13] |
| Fraction of CRC patients under age 65 at diagnosis | 43.6 percent | SEER, [5] |
| **Impacts and Costs** |
| Direct medical costs | CEA Test = $23.41CT Scan = $317.52 | CMS, 2018a; CMS, 2018b |
| Out-of-pocket costs | Copayment = $27.27Travel cost per appointment = $48.12 | Dusetzina et al., 2015; Snyder et al., 2018 |
| Patient time cost | $29.95 per hour |  BLS DOL, 2019 and BLS DOL 2018a  |
| Time per office visit | 1.44 hours | Yabroff et al., 2007 |
| Family caregiver time cost | $16.90 per hour | BLS DOL, 2018b |

Table A.2. Distributions Used for Probabilistic Sensitivity Analysis

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Study Population Parameters** | **Default** |  **Range**  | **SE** | **alpha** | **beta** | **Distribution** |
| **Incidence of Curative Resection for Colorectal Cancer, per 100,000 Person-Years** |
| Proximal and distal, stages 1–3 | 36.9 | 32.116 | 37.888 | 1.472 | - | - | normal |
| **PCORI Study Findings** |
| 5-year survival after curative resection | 73.7 percent | 72.4 percent | 75.0 percent | 0.007 | 3247 | 1159 | beta |
| ***Testing Frequency, Low-Intensity Surveillance*** |
| Average number of CEA tests over 3 years of surveillance | 1.63 | 1.55 | 1.71 | 0.041 | - | - | normal |
| Average number of CT scans over 3 years of surveillance | 1.63 | 1.58 | 1.68 | 0.026 | - | - | normal |
| ***Testing Frequency, High-Intensity Surveillance*** |
| Average number of CEA tests over 3 years of surveillance | 4.31 | 4.18 | 4.44 | 0.066 | - | - | normal |
| Average number of CT scans over 3 years of surveillance | 2.87 | 2.79 | 2.94 | 0.038 | - | - | normal |
| **Direct Costs** |
| ***Medical Costs*** |
| CEA test | $23.41 | $18.73 | $28.09 | 2.389 | 96.0 | 0.2 | gamma |
| CT scan | $317.52 | $254.02 | $381.02 | 32.400 | 96.0 | 3.3 | gamma |
| ***Out-of-Pocket Costs*** |
| Copayment per office visit | $27.27 | $21.82 | $32.72 | 2.783 | 96.0 | 0.3 | gamma |
| Travel cost per office visit | $48.12 | $38.50 | $57.74 | 4.910 | 96.0 | 0.5 | gamma |
| **Informal Healthcare and Non-Healthcare Sector Inputs** |
| ***Lost Patient Time*** |
| Patient time spent per office visit (hours) | 1.44 | 1.41 | 1.47 | 0.015 | - | - | normal |
| ***Value of Lost Time*** |
| Average hourly wage rate + fringe | $29.95 | $23.96 | $35.94 | 3.056 | 96.0 | 0.3 | gamma |
| Average hourly caregiver wage + fringe  | $16.90 | $13.52 | $20.28 | 1.724 | 96.0 | 0.2 | gamma |
| ***Additional Productivity Loss*** |
| Productivity loss multiplier for employer | 0.44 | 0.35 | 0.52 | 0.102 | - | - | lognormal |
| Productivity loss multiplier for family | 0.41 | 0.33 | 0.49 | 0.042 | - | - | lognormal |