**Supplemental Methods**:

***Data Sources***:

Data for medications covered under Medicare Part D was obtained from the Centers for Medicare and Medicaid Services (CMS) Prescription Drug Plan (PDP) Formulary and Pricing Information files. Data for medications covered under Medicare Part B was obtained from the CMS Average Sale Prices (ASP) files. Cost data for medications reimbursed under Medicare Part C (Medicare Advantage) was not available.

Costs for medications with copay assistance were obtained from each manufacturers’ website.

***Excluded Plans***:

We excluded Medicare-Medicaid plans, employer-sponsored plans, demonstration plans, Program of All-inclusive Care for the Elderly (PACE), and Institutional Special Needs Plans (I-SNPs) within Part D plans since these plans are available to only a small subset of beneficiaries, allow for specialized benefit design, and, in some cases, do not have publicly available data regarding benefit structure and drug costs.

***Cost Calculations***:

For Part D medications, we calculated the median retail price (point-of-sale price prior to any manufacturer rebates) and OOP cost of each medication according to the cost-sharing structure defined by each plan. For Part B medications, OOP costs were calculated for a with and without a Medigap plan with full Part B coinsurance coverage. We assumed a 70 kg patient for any medications with weight-based dosing.

For medications with multiple formulations, we selected one formulation for our main analysis but performed sensitivity analyses using other common formulations (see in Supplemental Tables 1-3 on next pages).

***Income Thresholds***:

We arrived at annual incomes of $30,000, $55,000, and $90,000 based on data from Jacobson et al and Schoen et al (references 7 and 8), which both examined per capita income of Medicare beneficiaries in 2016. We scaled these values by the change in Federal Poverty Limit (FPL) for individuals between 2016 and 2022 to arrive at approximate per capita income at the 50th, 75th, and 90th percentiles, then rounded up to the nearest increment of $5,000. While these are not exact values, we believe that these amounts are illustrative of the financial burden that OOP costs for specialty IBD medications can impose on beneficiaries.

***Adjustment***:

We adjusted by FPL rather than consumer price index or other measures of inflation as eligibility for financial assistance is determined by a beneficiary’s income relative to the FPL.

**Supplemental Table 1.** Formulations and number of fills per year for each specialty medication used in cost analysis

|  |  |  |
| --- | --- | --- |
| **Medication** | **Dosing** | **Formulation and number of fills** |
| Adalimumab | Induction | CF 80mg / 0.8 mL pen starter kit (1 fill), then CF 40mg / 0.4mL pen (11 fills) |
| Maintenance | CF 40mg / 0.4mL pen (12 fills) |
| Certolizumab pegol | Induction | 200mg / 1mL pen (13 fills) |
| Maintenance | 200mg / 1mL pen (12 fills) |
| Golimumab | Induction | 100mg / 1mL pen (14 fills) |
| Maintenance | 100mg / 1mL pen (12 fills) |
| Ustekinumab | Induction | 390mg IV infusion (1 dose), then 90mg / 1mL syringe (5 fills) |
| Maintenance | 90mg / 1mL syringe (6 fills) |
| Tofacitinib | Induction | 10mg tablets (2 fills), then 5mg tablets (10 fills) |
| Maintenance | 5mg tablets (12 fills) |
| Infliximab (and biosimilars)a | Induction | 350mg IV infusion (7 doses) |
| Maintenance | 350mg IV infusion (6 doses) |
| Natalizumab | Both | 300mg IV infusion (12 doses) |
| Vedolizumab | Induction | 300mg IV infusion (7 doses) |
| Maintenance | 300mg IV infusion (6 doses) |

CF, citrate-free; IV, intravenous.

aAssumes 5mg/kg dosing for a 70kg patient every 8 weeks.

**Supplemental Table 2.** Retail and out-of-pocket costs for alternative specialty medication formulations for maintenance treatment in 2022

|  |  |  |
| --- | --- | --- |
| **Formulation** | **Retail cost, $, median (IQR)** | **OOP, $, median (IQR)** |
| Adalimumab CF 40mg / 0.4mL syringe (12 fills) | 76,230 (71,117 – 77,287) | 6,222 (5,698 – 6,268) |
| Adalimumab 40mg / 0.8mL pen (12 fills) | 76,225 (70,778 – 77,211) | 6,222 (5,952 – 6,266) |
| Adalimumab 40mg / 0.8mL syringe (12 fills) | 76,214 (70,971 – 77,107) | 6,219 (5,964 – 6,265) |
| Certolizumab 200mg / 1mL syringe (12 fills) | 59,000 (56,783 – 61,597) | 5,367 (5,245 – 5,487) |
| Golimumab 100mg / 1mL syringe (12 fills) | 77,622 (73,919 – 77,902) | 6,284 (6,113 – 6,312) |
| Tofacitinib ER 11mg tablets (12 fills) | 62,617 (58,261 – 63,386) | 5,539 (5,328 – 5,581) |

CF, citrate-free; ER, extended release.

**Supplemental Table 3.** Retail and out-of-pocket costs for alternative specialty medication formulations for treatment induction in 2022

|  |  |  |
| --- | --- | --- |
| **Formulation** | **Retail cost, $, median (IQR)** | **OOP, $, median (IQR)** |
| Adalimumab CF 80mg / 0.8mL pen starter kit (1 fill), then adalimumab CF 40mg / 0.4mL syringe (11 fills) | 88,986 (83,065 – 90,164) | 6,858 (6,567 – 6,911) |
| Adalimumab 40mg / 0.8mL pen starter kit (1 fill), then adalimumab 40mg / 0.8mL pen (11 fills) | 88,911 (82,817 – 90,063) | 6,854 (6,554 – 6,910) |
| Adalimumab 40mg / 0.8mL pen starter kit (1 fill), then adalimumab 40mg / 0.8mL syringe (11 fills) | 88,898 (82,965 – 89,925) | 6,854 (6,563 – 6,908) |
| Certolizumab 200mg / 1mL syringe (13 fills) | 63,916 (61,515 – 66,730) | 5,613 (5,480 – 5,744) |
| Golimumab 100mg / 1mL syringe (14 fills) | 90,559 (86,239 – 90,885) | 6,932 (6,729 – 6,961) |
| Tofacitinib ER 22mg tablets (2 fills), then tofacitinib ER 11mg tablets (10 fills) | 62,792 (58,567 – 63,402) | 5,543 (5,343 – 5,583) |

CF, citrate-free; ER, extended release.