

Drug Costs

Patients are assumed to receive treatments in the reference or new scenario based on the products' monographs and approved treatment regimens used in Canada. The overall drug cost per patient was calculated based on the number of cycle in a year using the formula below. Table A1 represents the drug cost per treatment in a given year, without accounting for carry-over.

$$\text{Overall Cost Per Patient} = \left(\frac{\text{cost}}{\text{mg}} \times \text{Recommended dose per cycle} \right) \times \text{number of cycles}$$

Table S1. Drug Cost for 1-Year (without carry-over).

| | Recommended | Description | Cycle Length (days) | Recommended dose per cycle (mg) | Unit cost | Cost/ mg | Number of cycles | Overall cost per patient |
|--------------------|-------------------------|--------------|---------------------|------------------------------------|-----------|----------|------------------|--------------------------|
| 1L | Carboplatin +Pemetrexed | IV | 21 | Refer to IV Drug Cost Calculations | | | 7.1 | \$10,157.00 |
| | Pembrolizumab+ | IV | 21 | Refer to IV Drug Cost Calculations | | | 13.0 | \$133,307.14 |
| | Carboplatin+ Pemetrexed | IV | 21 | Refer to IV Drug Cost Calculations | | | 14.9 | \$131,212.19 |
| 2L | Pembrolizumab | IV | 21 | Refer to IV Drug Cost Calculations | | | | |
| | Docetaxel | IV | 21 | Refer to IV Drug Cost Calculations | | | 5.0 | \$4,417.90 |
| | Nivolumab | IV | 14 | Refer to IV Drug Cost Calculations | | | 5.5 | \$19,982.41 |
| | Pembrolizumab | IV | 21 | Refer to IV Drug Cost Calculations | | | 4.1 | \$48,408.38 |
| | Atezolizumab | IV | 21 | Refer to IV Drug Cost Calculations | | | 5.0 | \$27,465.39 |
| Targeted Therapies | | | | | | | | |
| 1L | Osimertinib* | Oral-Tablet | 1 | 80 | 80 | \$294.68 | \$3.68 | 365.0 |
| | Alectinib* | Oral- Tablet | 0.5 | 600 | 150 | \$42.20 | \$0.28 | 730.0 |
| | Crizotinib* | Oral-Tablet | 0.5 | 250 | 250 | \$130.00 | \$0.52 | 730.0 |
| | Entrectinib* | Oral-Tablet | 1 | 600 | 200 | \$95.33 | \$0.48 | 365.0 |

*These treatments are associated with carry-over; 1L- first-line, 2L- Second-line.

*IV Drug Cost Calculations***Table S2.** IV Drug Unit Costs.

| Molecule | Cost | Strength in vial (mg) | Cost per mg |
|---------------|------------|-----------------------|-------------|
| Pemetrexed | - | - | \$0.62 |
| Cisplatin | \$135.00 | 50 | \$2.70 |
| | \$270.00 | 100 | \$2.70 |
| Carboplatin | - | - | \$1.29 |
| Docetaxel | - | - | \$11.56 |
| Pembrolizumab | - | - | \$44.00 |
| Nivolumab | \$782.22 | 40 | \$19.56 |
| | \$1,955.56 | 100 | \$19.56 |
| Atezolizumab | \$6,776.00 | 1200 | \$5.65 |

Note: Atezolizumab list prices 2019. Hoffmann-La Roche Data on file. All other drug costs were taken from DeltaPA.

Table S3. Patient Characteristics.

| | |
|--|-------|
| Median Patient Weight | 68.20 |
| Median BSA (m2) | 1.76 |
| Median Glomerular Filtration Rate (mL/min) | 99.92 |

Table S4. Number of Cycles Calculations for IV Therapies.

| Therapy | Duration of Exposure (months) | Duration of Exposure (days) | Number of cycles |
|--|-------------------------------|-----------------------------|------------------|
| First-line Therapies | | | |
| Carboplatin+ Pemetrexed | 4.9 | 149.0 | 7.1 |
| Pembrolizumab+ Carboplatin+ Pemetrexed | 9.0 | 273.6 | 13.0 |
| Pembrolizumab | 10.3 | 313.1 | 14.9 |
| Second-line Therapies | | | |
| Docetaxel | 2.0 | 60.8 | 2.9 |
| Nivolumab* | 2.3 | 69.9 | 5.0 |
| Pembrolizumab | 3.8 | 115.5 | 5.5 |
| Atezolizumab | 2.8 | 85.1 | 4.1 |

Note: The length of a cycle is 21 days except Nivolumab, 14 days. Duration of exposure (days) = Duration of exposure (months) * 30.4 days.

*First Line Treatments***Table S5.** Chemotherapy Treatment.

| Product | Recommended Dosage | Dose Needed per Administration (mg) | Cost per mg | Cost of Dose per cycle | Number of cycles | Cost per patient | Total cost per patient |
|-------------|-------------------------------|-------------------------------------|-------------|------------------------|------------------|------------------|------------------------|
| Pemetrexed | 500 mg/m ² IV q21d | 880.00 | \$0.62 | \$545.60 | 7.1 | \$3,870.12 | \$10,157.00 |
| Carboplatin | AUC 5 IV q21d | 687.06 | \$1.29 | \$886.31 | 7.1 | \$6,286.87 | |

Table S6. Chemo-immunotherapy Treatment.

| Product | Recommended Dosage | Dose Needed per Administration (mg) | Cost per mg | Cost of Dose per cycle | Number of cycles | Cost per patient | Total cost per patient |
|---------------|-------------------------------|-------------------------------------|-------------|------------------------|------------------|------------------|------------------------|
| Pemetrexed | 500 mg/m ² IV q21d | 880.00 | \$0.62 | \$545.60 | 13.0 | \$7,108.39 | \$133,307.14 |
| Carboplatin | AUC 5 IV q21d | 687.06 | \$1.29 | \$886.31 | 13.0 | \$11,547.32 | |
| Pembrolizumab | 200 mg q21d | 200.00 | \$44.00 | \$8,800.00 | 13.0 | \$114,651.43 | |

Table S7. Immunotherapy Treatment.

| Product | Recommended Dosage | Dose Needed per Administration (mg) | Cost per mg | Cost of Dose per cycle | Number of cycles | Cost per patient | Total cost per patient |
|---------------|--------------------|-------------------------------------|-------------|------------------------|------------------|------------------|------------------------|
| Pembrolizumab | 200 mg q21d | 200.00 | \$44.00 | \$8,800.00 | 14.9 | \$131,212.19 | \$131,212.19 |

*Second Line Treatments***Table S8.** Immunotherapy Treatment.

| Product | Recommended Dosage | Dose Needed per Administration (mg) | Cost per mg | Cost of Dose per cycle | Number of cycles | Cost per patient | Total cost per patient |
|---------------|------------------------------|-------------------------------------|-------------|------------------------|------------------|------------------|------------------------|
| Docetaxel | 75 mg/m ² IV q21d | 132 | \$11.56 | \$1,525.92 | 2.9 | \$4,417.90 | \$4,417.90 |
| Nivolumab | 3 mg/kg IV q14d | 204.6 | \$19.56 | \$4,001.06 | 5.0 | \$19,982.41 | \$19,982.41 |
| Pembrolizumab | 200 mg q21d | 200.00 | \$44.00 | \$8,800.00 | 5.5 | \$48,408.38 | \$48,408.38 |
| Atezolizumab | 1200 mg IV q21d | 1200 | \$5.65 | \$6,776.00 | 4.1 | \$27,465.39 | \$27,465.39 |

Medical Costs

Medical costs in this model include administrative costs and supportive costs.

Administrative Costs

Administrative costs include: chair time, pharmacist, clinician consultation, and pre-medication cost. For oral treatments, the cost is calculated on a weekly basis, and for IV treatments, the costs calculated per every 21 days. Refer to Table A1 for the cost breakdown.

Table S9. Administrative Costs for Oral and IV treatments.

| Administrative costs | IV treatments- cost per 21 day cycle | Oral treatments- cost per week |
|-----------------------------|--------------------------------------|--------------------------------|
| Chair time | \$633.01 | \$0.00 |
| Pharmacist cost | \$0.00 | \$1.36 |
| Clinician consultation cost | \$84.21 | \$2.37 |
| Pre-medication cost | \$29.07 | \$0.00 |
| Total: | \$746.28 | \$3.73 |

Supportive Costs

Supportive costs include: clinician consultation, lab testing, and imaging costs. For oral treatments, the cost is calculated on a weekly basis, and the for IV treatments the costs are per every 21 days (typical cycle length). Refer to Table A2 for the cost.

Table S10. Supportive Costs for Oral and IV treatments.

| Supportive costs | IV treatments- cost per 21 day cycle | Oral treatments- cost per week |
|-----------------------------|--------------------------------------|--------------------------------|
| Clinician consultation cost | \$38.05 | \$4.39 |
| Lab testing | \$49.64 | \$5.73 |
| Imaging | \$252.60 | \$147.14 |
| Total | \$340.29 | \$157.25 |