**Supplementary Materials**

**Figure 1: Graphical Depiction of the Model**

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Note: Chemo+R = chemotherapy plus rituximab

**Figure 2: Overall Patient Counts and Utilization of R+Chemo by Tumor and Year**



Note: R + Chemo = rituximab plus chemotherapy, FL = follicular lymphoma, CLL = chronic lymphocytic leukemia, DLBCL = diffuse large B-cell lymphoma

**Table 1: Demographic information about the overall cohorts and the treated subgroups**

|   | **Treated patients** | **All Patients** |
| --- | --- | --- |
|   | **CLL (n=2,395 treated within 730 days)** | **DLBCL (n=11,030 treated within 180 days)** | **FL (n=4,697 treated within 365 days)** | **CLL (n=12,203)** | **DLBCL (n=16,378)** | **FL (n=8,010)** |
|   | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** | **n** | **%** |
| **Age (years)** |   |   |   |   |   |   |   |   |   |   |   |   |
| **<=50** | \* | \* | 221 | 2.0 | 73 | 1.6 | 38 | 0.3 | 398 | 2.4 | 112 | 1.4 |
| **50-54** | \* | \* | 142 | 1.3 | 58 | 1.2 | 70 | 0.6 | 222 | 1.4 | 97 | 1.2 |
| **55-59** | 41\* | 1.7\* | 179 | 1.6 | 77 | 1.6 | 133 | 1.1 | 274 | 1.7 | 142 | 1.8 |
| **60-64** | 60 | 2.5 | 223 | 2.0 | 123 | 2.6 | 259 | 2.1 | 345 | 2.1 | 191 | 2.4 |
| **65-69** | 429 | 17.9 | 1772 | 16.1 | 1004 | 21.4 | 1825 | 15.0 | 2274 | 13.9 | 1560 | 19.5 |
| **70-74** | 561 | 23.4 | 2549 | 23.1 | 1150 | 24.5 | 2519 | 20.6 | 3345 | 20.4 | 1871 | 23.4 |
| **75-79** | 628 | 26.2 | 2611 | 23.7 | 1012 | 21.5 | 2743 | 22.5 | 3627 | 22.1 | 1759 | 22.0 |
| **80-84** | 433 | 18.1 | 2062 | 18.7 | 805 | 17.1 | 2343 | 19.2 | 3272 | 20.0 | 1421 | 17.7 |
| **85+** | 243 | 10.1 | 1271 | 11.5 | 395 | 8.4 | 2273 | 18.6 | 2621 | 16.0 | 857 | 10.7 |
| **Gender** |   |   |   |   |   |   |   |   |   |   |   |   |
| **Male** | 1452 | 60.6 | 5266 | 47.7 | 2100 | 44.7 | 6672 | 54.7 | 5266 | 47.7 | 3557 | 44.4 |
| **Female** | 943 | 39.4 | 5764 | 52.3 | 2597 | 55.3 | 5531 | 45.3 | 5764 | 52.3 | 4453 | 55.6 |
| **Race/Ethnicity** |   |   |   |   |   |   |   |   |   |   |   |   |
| **White** | 2110 | 88.1 | 9398 | 85.2 | 4150 | 88.4 | 10705 | 87.7 | 13724 | 83.8 | 7136 | 89.1 |
| **Black** | 137 | 5.7 | 464 | 4.2 | 161 | 3.4 | 705 | 5.8 | 782 | 4.8 | 281 | 3.5 |
| **Hispanic** | 74 | 3.1 | 629 | 5.7 | 242 | 5.2 | 321 | 2.6 | 990 | 6.0 | 341 | 4.3 |
| **Other** | 74 | 3.1 | 539 | 4.9 | 144 | 3.1 | 472 | 3.9 | 882 | 5.4 | 252 | 3.1 |
| **Year of Diagnosis**  |   |   |   |   |   |   |   |   |   |   |   |   |
| **2000** | 184 | 8.4 | 981 | 8.9 | 385 | 8.2 | 1042 | 8.5 | 1486 | 9.1 | 714 | 8.9 |
| **2001** | 243 | 11.1 | 985 | 8.9 | 373 | 7.9 | 1197 | 9.8 | 1523 | 9.3 | 674 | 8.4 |
| **2002** | 240 | 10.9 | 1071 | 9.7 | 458 | 9.8 | 1197 | 9.8 | 1630 | 10.0 | 789 | 9.9 |
| **2003** | 274 | 12.5 | 1174 | 10.6 | 479 | 10.2 | 1369 | 11.2 | 1707 | 10.4 | 854 | 10.7 |
| **2004** | 278 | 12.7 | 1174 | 10.6 | 513 | 10.9 | 1414 | 11.6 | 1723 | 10.5 | 858 | 10.7 |
| **2005** | 275 | 12.5 | 1173 | 10.6 | 523 | 11.1 | 1337 | 11.0 | 1732 | 10.6 | 883 | 11.0 |
| **2006** | 264 | 12.0 | 1175 | 10.7 | 518 | 11.0 | 1305 | 10.7 | 1717 | 10.5 | 865 | 10.8 |
| **2007** | 22 | 1.0 | 1153 | 10.5 | 508 | 10.8 | 1153 | 9.4 | 1701 | 10.4 | 839 | 10.5 |
| **2008** | 238 | 10.8 | 1082 | 9.8 | 490 | 10.4 | 1172 | 9.6 | 1602 | 9.8 | 791 | 9.9 |
| **2009** | 179 | 8.1 | 1062 | 9.6 | 450 | 9.6 | 1017 | 8.3 | 1557 | 9.5 | 743 | 9.3 |
| **Anemia** |   |   |   |   |   |   |   |   |   |   |   |   |
| **No** | 1334 | 55.7 | 6620 | 60.0 | 3342 | 71.2 | 7602 | 62.3 | 9368 | 57.2 | 5863 | 73.2 |
| **Yes** | 1061 | 44.3 | 4410 | 40.0 | 1355 | 28.8 | 4601 | 37.7 | 7010 | 42.8 | 2147 | 26.8 |
| **NCI Comorbidity Index** |   |   |   |   |   |   |   |   |   |   |   |   |
| **0** | 1286 | 53.7 | 5159 | 46.8 | 2593 | 55.2 | 6220 | 51.0 | 7040 | 43.0 | 4377 | 54.6 |
| **1** | 616 | 25.7 | 2990 | 27.1 | 1205 | 25.7 | 2998 | 24.6 | 4259 | 26.0 | 2032 | 25.4 |
| **>=2** | 493 | 20.6 | 2881 | 26.1 | 899 | 19.1 | 2985 | 24.5 | 5079 | 31.0 | 1601 | 20.0 |
| **Performance status indicators** |   |   |   |   |   |   |   |   |   |   |   |   |
| **0** | 2036 | 85.0 | 8389 | 76.1 | 3892 | 82.9 | 9281 | 76.1 | 11572 | 70.7 | 6526 | 81.5 |
| **>=1** | 359 | 15.0 | 2641 | 23.9 | 805 | 17.1 | 2922 | 23.9 | 4806 | 29.3 | 1484 | 18.5 |
| **Type of first line chemotherapy** |   |   |   |   |   |   |   |   |   |   |   |   |
| **R mono** | 960 | 40.1 | 933 | 8.5 | 1218 | 37.8 |   |   |   |   |   |   |
| **R-Chemotherapy** | 481 | 20.1 | 8009 | 72.6 | 1218 | 37.8 |   |   |   |   |   |   |
| **Chemotherapy alone** | 954 | 39.8 | 2088 | 18.9 | 788 | 24.4 |   |   |   |   |   |   |

Note: \* means cells combined for privacy reasons. Also, the survival and cost analyses were restricted to those without missing data on stage (not shown in the tables below). Patients treated with R monotherapy are not included in any analyses or the population model. The treated subgroups are summarized in
Table 2.

**Table 2: Demographic information on the patients included in the cost and survival analyses, by cancer type**

|  |  |  |
| --- | --- | --- |
| **CLL (N = 1297)** | **Chemo Alone** | **R + Chemo** |
| **Mean Age** | 75.8 | 73.3 |
| **Pct Male** | 0.62 | 0.65 |
| **Pct White** | 0.89 | 0.86 |
| **Pct Black** | 0.07 | 0.08 |
| **Pct Hispanic** | 0.03 | 0.03 |
| **Pct Other** | 0.02 | 0.03 |
| **Pct Charlson 0** | 0.55 | 0.60 |
| **Pct Charlson 1+** | 0.45 | 0.40 |
| **Pct Anemia** | 0.40 | 0.43 |
| **Pct Mobility Limits** | 0.14 | 0.15 |
| **Pct Dx Year 2000-2003** | 0.59 | 0.28 |
| **Pct Dx Year 2007-2009** | 0.16 | 0.40 |

|  |  |  |
| --- | --- | --- |
| **FL (N = 3215)** | **Chemo Alone** | **R + Chemo** |
| **Mean Age** | 73.4 | 73.3 |
| **Pct Male** | 0.45 | 0.47 |
| **Pct Stage 1** | 0.85 | 0.89 |
| **Pct Stage 2** | 0.05 | 0.03 |
| **Pct Stage 3** | 0.07 | 0.05 |
| **Pct Stage 4** | 0.03 | 0.03 |
| **Pct White** | 0.85 | 0.89 |
| **Pct Black** | 0.05 | 0.03 |
| **Pct Hispanic** | 0.07 | 0.05 |
| **Pct Other** | 0.03 | 0.03 |
| **Pct Charlson 0** | 0.55 | 0.57 |
| **Pct Charlson 1+** | 0.45 | 0.43 |
| **Pct Anemia** | 0.29 | 0.28 |
| **Pct B Symptoms** | 0.16 | 0.18 |
| **Pct Mobility Limits** | 0.17 | 0.15 |
| **Pct Dx Year 2000-2003** | 0.80 | 0.25 |
| **Pct Dx Year 2007-2009** | 0.07 | 0.37 |

|  |  |  |
| --- | --- | --- |
| **DLBCL (N = 9446)** | **Chemo Alone** | **R + Chemo** |
| **Mean Age** | 74.1 | 75.0 |
| **Pct Male** | 0.49 | 0.48 |
| **Pct Stage 1** | 0.85 | 0.86 |
| **Pct Stage 2** | 0.05 | 0.04 |
| **Pct Stage 3** | 0.06 | 0.06 |
| **Pct Stage 4** | 0.04 | 0.05 |
| **Pct White** | 0.85 | 0.86 |
| **Pct Black** | 0.05 | 0.04 |
| **Pct Hispanic** | 0.06 | 0.06 |
| **Pct Other** | 0.04 | 0.05 |
| **Pct Charlson 0** | 0.48 | 0.48 |
| **Pct Charlson 1+** | 0.52 | 0.52 |
| **Pct Anemia** | 0.36 | 0.40 |
| **Pct B Symptoms** | 0.21 | 0.22 |
| **Pct Mobility Limits** | 0.24 | 0.22 |
| **Pct Dx Year 2000-2003** | 0.82 | 0.27 |
| **Pct Dx Year 2007-2009** | 0.07 | 0.36 |

Note that patient counts different from Table 1 because patients with R monotherapy and patients with missing stage are not included in the cost and survival analyses.

**Table 3: Regression coefficients for the cost linear regression models (by cancer type)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **CLL** | **Coef.** | **Std. Err** | **z** | **P>|z|** | **95% Confidence Interval** |
| **Treated With Rituximab** | 31,434.88 | 9,565.75 | 3.29 | 0.00 | 12,686.35 | 50,183.41 |
| **Age Category** |
| 65-69 | Ref |
| <65 yrs | -46,975.87 | 23,255.29 | -2.02 | 0.04 | -92,555.41 | -1,396.34 |
| 70-74 yrs | -16,777.81 | 15,830.95 | -1.06 | 0.29 | -47,805.91 | 14,250.29 |
| 75-79 yrs | -30,046.65 | 13,418.71 | -2.24 | 0.03 | -56,346.83 | -3,746.48 |
| 80-84 yrs | -54,365.90 | 14,292.30 | -3.80 | 0.00 | -82,378.29 | -26,353.50 |
| 85+ yrs | -79,775.82 | 15,214.03 | -5.24 | 0.00 | -109,594.80 | -49,956.88 |
| **Gender** |
| Female | Ref |
| Male | 6,706.12 | 9,413.62 | 0.71 | 0.48 | -11,744.22 | 25,156.47 |
| **Race Category** |
| White | Ref |
| Black | -23,487.80 | 13,102.96 | -1.79 | 0.07 | -49,169.13 | 2,193.54 |
| Hispanic | 13,242.75 | 24,487.72 | 0.54 | 0.59 | -34,752.29 | 61,237.79 |
| Other | -9,816.36 | 32,396.05 | -0.30 | 0.76 | -73,311.45 | 53,678.73 |
| **Dx 2000-2003** | 12,209.09 | 8,532.13 | 1.43 | 0.15 | -4,513.59 | 28,931.76 |
| **Dx 2007-2009** | -41,854.40 | 11,078.41 | -3.78 | 0.00 | -63,567.69 | -20,141.10 |
| **Charlson = 1** | 12,836.37 | 12,071.74 | 1.06 | 0.29 | -10,823.81 | 36,496.56 |
| **Charlson >=2** | 17,946.54 | 12,831.43 | 1.40 | 0.16 | -7,202.60 | 43,095.68 |
| **Anemia** | 12,592.00 | 8,637.52 | 1.46 | 0.15 | -4,337.23 | 29,521.24 |
| **Mobility Limits** | -18,661.64 | 11,376.23 | -1.64 | 0.10 | -40,958.64 | 3,635.36 |
| **Intercept** | 150,752.20 | 16,383.41 | 9.20 | 0.00 | 118,641.30 | 182,863.10 |

Note: stage not available for CLL

| **FL** | **Coef.** | **Std. Err** | **z** | **P>|z|** | **95% Confidence Interval** |
| --- | --- | --- | --- | --- | --- |
| **Treated With Rituximab** | 23,511.22 | 5,903.11 | 3.98 | 0.00 | 11,941.33 | 35,081.11 |
| **Age Category** |
| 65-69 | Ref |
| <65 yrs | 14,390.40 | 12,408.70 | 1.16 | 0.25 | -9,930.21 | 38,711.01 |
| 70-74 yrs | 3,603.79 | 5,413.62 | 0.67 | 0.51 | -7,006.72 | 14,214.30 |
| 75-79 yrs | -1,531.04 | 7,062.08 | -0.22 | 0.83 | -15,372.46 | 12,310.38 |
| 80-84 yrs | -20,191.26 | 6,569.64 | -3.07 | 0.00 | -33,067.52 | -7,315.00 |
| 85+ yrs | -32,040.80 | 10,734.74 | -2.98 | 0.00 | -53,080.50 | -11,001.10 |
| **Gender** |
| Female | Ref |
| Male | 9,695.26 | 4,566.62 | 2.12 | 0.03 | 744.85 | 18,645.66 |
| **Stage** |
| 1 | Ref |
| 2 | 4,761.10 | 6,812.28 | 0.70 | 0.49 | -8,590.73 | 18,112.92 |
| 3 | 6,878.07 | 6,959.70 | 0.99 | 0.32 | -6,762.70 | 20,518.83 |
| 4 | 22,218.99 | 6,324.87 | 3.51 | 0.00 | 9,822.48 | 34,615.50 |
| **Race** |
| White | Ref |
| Black | 28,534.57 | 16,806.98 | 1.70 | 0.09 | -4,406.51 | 61,475.65 |
| Hispanic | 13,930.73 | 15,443.37 | 0.90 | 0.37 | -16,337.73 | 44,199.18 |
| Other | -24,654.06 | 10,260.77 | -2.40 | 0.02 | -44,764.79 | -4,543.33 |
| **B Symptoms** |
| Absent | Ref |
| Present | 5,881.03 | 6,623.97 | 0.89 | 0.38 | -7,101.71 | 18,863.77 |
| Unknown | 4,900.65 | 7,290.27 | 0.67 | 0.50 | -9,388.01 | 19,189.30 |
| **Dx 2000-2003** | 7,619.50 | 5,982.96 | 1.27 | 0.20 | -4,106.89 | 19,345.89 |
| **Dx 2007-2009** | -38,665.83 | 5,202.31 | -7.43 | 0.00 | -48,862.18 | -28,469.49 |
| **Charlson = 1** | 9,971.35 | 5,653.99 | 1.76 | 0.08 | -1,110.26 | 21,052.96 |
| **Charlson >=2** | 21,127.78 | 6,940.93 | 3.04 | 0.00 | 7,523.81 | 34,731.76 |
| **Anemia** | 10,679.16 | 4,596.34 | 2.32 | 0.02 | 1,670.49 | 19,687.82 |
| **Mobility Limits** | 33,792.73 | 8,022.45 | 4.21 | 0.00 | 18,069.01 | 49,516.44 |
| **Intercept** | 95,073.97 | 14,460.66 | 6.57 | 0.00 | 66,731.60 | 123,416.30 |

| **DLBCL** | **Coef.** | **Std. Err** | **z** | **P>|z|** | **95% Confidence Interval** |
| --- | --- | --- | --- | --- | --- |
| **Treated With Rituximab** | 33,525.18 | 2,997.71 | 11.18 | 0.00 | 27,649.78 | 39,400.57 |
| **Age Category** |
| 65-69 | Ref |
| <65 yrs | 13,095.51 | 6,830.03 | 1.92 | 0.06 | -291.10 | 26,482.11 |
| 70-74 yrs | -3,379.74 | 3,442.32 | -0.98 | 0.33 | -10,126.56 | 3,367.09 |
| 75-79 yrs | -6,504.65 | 3,649.55 | -1.78 | 0.08 | -13,657.64 | 648.33 |
| 80-84 yrs | -19,382.00 | 4,092.98 | -4.74 | 0.00 | -27,404.10 | -11,359.90 |
| 85+ yrs | -32,551.47 | 4,326.83 | -7.52 | 0.00 | -41,031.90 | -24,071.04 |
| **Gender** |
| Female | Ref |
| Male | -352.90 | 1,969.70 | -0.18 | 0.86 | -4,213.44 | 3,507.65 |
| **Stage** |
| 1 | Ref |
| 2 | 3,533.88 | 2,903.54 | 1.22 | 0.22 | -2,156.94 | 9,224.71 |
| 3 | 9,387.98 | 2,948.45 | 3.18 | 0.00 | 3,609.12 | 15,166.84 |
| 4 | 11,833.55 | 2,869.65 | 4.12 | 0.00 | 6,209.15 | 17,457.96 |
| **Race** |
| White | Ref |
| Black | 10,681.23 | 7,230.61 | 1.48 | 0.14 | -3,490.50 | 24,852.96 |
| Hispanic | 8,144.00 | 6,258.24 | 1.30 | 0.19 | -4,121.92 | 20,409.92 |
| Other | -10,381.81 | 5,505.09 | -1.89 | 0.06 | -21,171.58 | 407.96 |
| **B Symptoms** |
| Absent | Ref |
| Present | 5,883.27 | 2,579.14 | 2.28 | 0.02 | 828.24 | 10,938.29 |
| Unknown | 10,279.44 | 3,081.32 | 3.34 | 0.00 | 4,240.17 | 16,318.71 |
| **Dx 2000-2003** | 7,744.70 | 2,298.44 | 3.37 | 0.00 | 3,239.84 | 12,249.55 |
| **Dx 2007-2009** | -28,996.91 | 2,594.76 | -11.18 | 0.00 | -34,082.54 | -23,911.28 |
| **Charlson = 1** | 12,629.04 | 2,572.43 | 4.91 | 0.00 | 7,587.18 | 17,670.90 |
| **Charlson >=2** | 25,684.39 | 3,400.97 | 7.55 | 0.00 | 19,018.60 | 32,350.17 |
| **Anemia** | 9,586.30 | 2,443.87 | 3.92 | 0.00 | 4,796.40 | 14,376.20 |
| **Mobility Limits** | 128.20 | 3,024.10 | 0.04 | 0.97 | -5,798.93 | 6,055.32 |
| **Intercept** | 83,049.33 | 5,503.42 | 15.09 | 0.00 | 72,262.83 | 93,835.84 |

**Table 4: Coefficients for the survival models, by cancer type**

| **Variable** | **Group**  | **Hazard Ratio** | **Std. Err.** | **z** | **P>|z|** | **Lower CI** | **Upper CI** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **CLL (N = 1297)** |
| Treatment (ref = chemo alone) | R + Chemo | 0.683 | 0.083 | -3.12 | 0.002 | 0.538 | 0.868 |
| Age (ref = 65-69) | <65 yrs | 0.694 | 0.209 | -1.21 | 0.225 | 0.385 | 1.253 |
| 70-74 yrs | 1.075 | 0.187 | 0.42 | 0.675 | 0.765 | 1.511 |
| 75-79 yrs | 1.534 | 0.262 | 2.50 | 0.012 | 1.098 | 2.144 |
| 80-84 yrs | 2.313 | 0.440 | 4.41 | 0.000 | 1.593 | 3.359 |
| 85+ yrs | 3.410 | 0.809 | 5.17 | 0.000 | 2.142 | 5.429 |
| Gender (ref = female) | Male | 1.336 | 0.157 | 2.46 | 0.014 | 1.061 | 1.681 |
| Race (ref = white) | Black | 1.368 | 0.296 | 1.45 | 0.148 | 0.895 | 2.092 |
| Hispanic | 0.891 | 0.301 | -0.34 | 0.732 | 0.459 | 1.727 |
| Other | 0.571 | 0.228 | -1.40 | 0.161 | 0.260 | 1.251 |
| Charlson (ref = 0) | = 1 | 1.341 | 0.181 | 2.18 | 0.029 | 1.030 | 1.746 |
| >= 2 | 1.535 | 0.238 | 2.76 | 0.006 | 1.132 | 2.081 |
| Anemia (ref = no) | yes | 0.948 | 0.111 | -0.46 | 0.645 | 0.754 | 1.191 |
| Mobility Limitations (ref = no) | yes | 1.669 | 0.269 | 3.18 | 0.001 | 1.217 | 2.289 |
| Spline | \_rcs1 | 3.567 | 0.159 | 28.54 | 0.000 | 3.269 | 3.893 |
| \_rcs2 | 1.000 | 0.034 | 0.01 | 0.995 | 0.936 | 1.069 |
| \_rcs3 | 0.856 | 0.021 | -6.49 | 0.000 | 0.817 | 0.897 |
| \_cons | 0.213 | 0.036 | -9.04 | 0.000 | 0.152 | 0.298 |
| **FL (N = 3215)** |
| Treatment (ref = chemo alone) | R + Chemo | 0.531 | 0.053 | -6.38 | 0.000 | 0.438 | 0.645 |
| Stage (ref = 1) | 2 | 1.317 | 0.180 | 2.02 | 0.044 | 1.008 | 1.721 |
| 3 | 1.546 | 0.189 | 3.56 | 0.000 | 1.216 | 1.965 |
| 4 | 1.954 | 0.231 | 5.66 | 0.000 | 1.550 | 2.464 |
| Age (ref = 65-69) | <65 yrs | 1.004 | 0.190 | 0.02 | 0.982 | 0.693 | 1.456 |
| 70-74 yrs | 1.465 | 0.183 | 3.07 | 0.002 | 1.148 | 1.870 |
| 75-79 yrs | 1.667 | 0.213 | 4.00 | 0.000 | 1.298 | 2.141 |
| 80-84 yrs | 3.991 | 0.535 | 10.32 | 0.000 | 3.069 | 5.191 |
| 85+ yrs | 5.420 | 0.954 | 9.60 | 0.000 | 3.838 | 7.653 |
| Gender (ref = female) | Male | 1.465 | 0.122 | 4.60 | 0.000 | 1.245 | 1.725 |
| Race (ref = white) | Black | 1.125 | 0.241 | 0.55 | 0.581 | 0.740 | 1.711 |
| Hispanic | 1.196 | 0.204 | 1.05 | 0.293 | 0.857 | 1.670 |
| Other | 0.898 | 0.233 | -0.41 | 0.678 | 0.540 | 1.493 |
| B symptoms (ref = absent) | present | 0.683 | 0.075 | -3.45 | 0.001 | 0.550 | 0.848 |
| unknown | 0.742 | 0.086 | -2.56 | 0.010 | 0.590 | 0.932 |
| Diagnosis Year (ref = 2004-2006) | 2000-2003 | 1.092 | 0.114 | 0.84 | 0.400 | 0.890 | 1.341 |
| 2007-2009 | 0.583 | 0.073 | -4.33 | 0.000 | 0.456 | 0.744 |
| Charlson (ref = 0) | = 1 | 1.474 | 0.146 | 3.91 | 0.000 | 1.214 | 1.789 |
| >= 2 | 2.486 | 0.280 | 8.08 | 0.000 | 1.993 | 3.102 |
| Anemia (ref = no) | yes | 1.389 | 0.127 | 3.58 | 0.000 | 1.160 | 1.663 |
| Mobility Limitations (ref = no) | yes | 1.483 | 0.162 | 3.60 | 0.000 | 1.196 | 1.837 |
| Spline | \_rcs1 | 2.863 | 0.088 | 34.09 | 0.000 | 2.695 | 3.042 |
| \_rcs2 | 1.110 | 0.031 | 3.70 | 0.000 | 1.050 | 1.173 |
| \_rcs3 | 0.938 | 0.016 | -3.70 | 0.000 | 0.907 | 0.970 |
| \_cons | 0.115 | 0.023 | -10.80 | 0.000 | 0.078 | 0.170 |
| **DLBCL (N = 9446)** |
| Treatment (ref = chemo alone) | R + Chemo | 0.543 | 0.029 | -11.36 | 0.000 | 0.489 | 0.603 |
| Stage (ref = 1) | 2 | 1.343 | 0.083 | 4.80 | 0.000 | 1.191 | 1.515 |
| 3 | 1.658 | 0.107 | 7.83 | 0.000 | 1.461 | 1.882 |
| 4 | 2.205 | 0.124 | 14.10 | 0.000 | 1.976 | 2.461 |
| Age (ref = 65-69) | <65 yrs | 1.096 | 0.111 | 0.91 | 0.363 | 0.899 | 1.336 |
| 70-74 yrs | 1.338 | 0.095 | 4.09 | 0.000 | 1.164 | 1.538 |
| 75-79 yrs | 1.693 | 0.119 | 7.51 | 0.000 | 1.476 | 1.943 |
| 80-84 yrs | 2.437 | 0.179 | 12.11 | 0.000 | 2.110 | 2.815 |
| 85+ yrs | 4.082 | 0.345 | 16.62 | 0.000 | 3.459 | 4.819 |
| Gender (ref = female) | Male | 1.246 | 0.053 | 5.15 | 0.000 | 1.146 | 1.355 |
| Race (ref = white) | Black | 1.152 | 0.120 | 1.36 | 0.173 | 0.940 | 1.413 |
| Hispanic | 1.042 | 0.096 | 0.45 | 0.654 | 0.870 | 1.249 |
| Other | 1.129 | 0.113 | 1.21 | 0.226 | 0.928 | 1.373 |
| B symptoms (ref = absent) | present | 0.740 | 0.040 | -5.51 | 0.000 | 0.664 | 0.823 |
| unknown | 0.848 | 0.050 | -2.79 | 0.005 | 0.756 | 0.952 |
| Diagnosis Year (ref = 2004-2006) | 2000-2003 | 1.093 | 0.059 | 1.66 | 0.098 | 0.984 | 1.215 |
| 2007-2009 | 0.720 | 0.042 | -5.60 | 0.000 | 0.642 | 0.808 |
| Charlson (ref = 0) | = 1 | 1.218 | 0.063 | 3.84 | 0.000 | 1.101 | 1.347 |
| >= 2 | 1.932 | 0.106 | 12.04 | 0.000 | 1.735 | 2.150 |
| Anemia (ref = no) | yes | 1.344 | 0.060 | 6.63 | 0.000 | 1.232 | 1.467 |
| Mobility Limitations (ref = no) | yes | 1.587 | 0.080 | 9.12 | 0.000 | 1.437 | 1.752 |
| Spline | \_rcs1 | 2.996 | 0.046 | 70.74 | 0.000 | 2.906 | 3.088 |
| \_rcs2 | 1.223 | 0.017 | 14.41 | 0.000 | 1.190 | 1.257 |
| \_rcs3 | 1.015 | 0.010 | 1.49 | 0.136 | 0.995 | 1.035 |
| \_rcs4 | 0.967 | 0.006 | -5.68 | 0.000 | 0.956 | 0.978 |
| \_rcs5 | 0.970 | 0.004 | -7.07 | 0.000 | 0.962 | 0.978 |
| \_cons | 0.172 | 0.018 | -16.92 | 0.000 | 0.140 | 0.211 |

**Table 5: Mean survival Inputs (based on regression model), by cancer type.**

|  | **Chemo Alone** |  |  | **R + Chemo** |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Mean Life Days** | **SE** |  | **Mean Life Days** | **SE** |  |
|  | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** | **Female** | **Male** |
| **FL** |
| **<65** | 2,491.88 | 2,752.27 | 49.16 | 42.77 | 2,902.30 | 3,087.75 | 37.21 | 30.68 |
| **65-69** | 2,585.02 | 2,807.31 | 24.02 | 22.12 | 2,972.38 | 3,124.85 | 17.56 | 15.69 |
| **70-74** | 2,255.86 | 2,608.12 | 28.76 | 21.88 | 2,725.72 | 2,988.57 | 22.88 | 16.13 |
| **75-79** | 2,171.00 | 2,473.35 | 33.97 | 26.96 | 2,659.14 | 2,888.78 | 27.81 | 20.61 |
| **80-84** | 1,393.03 | 1,746.45 | 46.01 | 38.47 | 1,975.73 | 2,307.93 | 45.82 | 34.99 |
| **85+** | 1,070.28 | 1,476.14 | 78.95 | 71.60 | 1,627.76 | 2,055.48 | 85.60 | 70.25 |
| **CLL** |
| **<65** | 2,074.87 | 2,248.55 | 69.42 | 284.73 | 2,375.77 | 2,532.05 | 65.76 | 273.40 |
| **65-69** | 1,934.39 | 2,107.66 | 27.97 | 53.73 | 2,251.20 | 2,404.44 | 26.96 | 50.09 |
| **70-74** | 1,858.32 | 2,091.75 | 28.28 | 55.64 | 2,181.58 | 2,391.74 | 27.91 | 52.47 |
| **75-79** | 1,501.88 | 1,873.21 | 35.69 | 47.61 | 1,834.97 | 2,192.29 | 36.63 | 47.33 |
| **80-84** | 1,149.02 | 1,439.18 | 51.64 | 83.46 | 1,468.86 | 1,772.23 | 57.01 | 87.36 |
| **85+** | 853.47 | 1,196.41 | 152.13 | 154.25 | 1,133.83 | 1,519.76 | 181.07 | 170.37 |
| **DLBCL** |
| **<65** | 1,919.30 | 2,112.27 | 31.02 | 41.42 | 2,406.32 | 2,568.13 | 26.70 | 34.60 |
| **65-69** | 2,165.27 | 2,331.13 | 18.80 | 17.36 | 2,611.92 | 2,745.27 | 15.48 | 13.64 |
| **70-74** | 1,908.09 | 2,066.80 | 16.40 | 16.22 | 2,403.70 | 2,532.04 | 14.15 | 13.62 |
| **75-79** | 1,634.98 | 1,859.67 | 17.73 | 16.36 | 2,163.24 | 2,359.40 | 16.30 | 14.40 |
| **80-84** | 1,311.12 | 1,564.35 | 20.48 | 18.11 | 1,854.83 | 2,099.20 | 20.71 | 17.13 |
| **85+** | 910.89 | 1,126.66 | 26.95 | 24.27 | 1,426.65 | 1,661.80 | 31.01 | 26.35 |

Note that because the survival models are log-linear models, there are separate estimates for survival by age even though there was no interaction term. Also, due to sample size limitations, all patients under age 65 were grouped together. All values in the table are in days. See Methods for more details.

**Table 6: Incremental cost inputs (based on the cost model), by cancer type**

|  |  |
| --- | --- |
|  | **Incremental Cost Difference per Subject(Chemo + R vs Chemo Alone)** |
|  | **Mean Incr Cost** | **SE** |  |
|  | **Female** | **Male** | **Female** | **Male** |
| **FL** | $28,211 | $28,211 | $5,903 | $5,903 |
| **CLL** | $38,289 | $38,289 | $9,566 | $9,566 |
| **DLBCL** | $43,899 | $43,899 | $2,998 | $2,998 |

Note: The interaction between rituximab treatment and age was not significant in any of the 3 linear models. Therefore, because the incremental cost for rituximab did not depend on age, a single value for the incremental cost of rituximab was used. See Methods for more details.