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Assignment 4: Health state transition in R

January 31, 2024

A new end-of-life care was approved based on the clinical trial result that it can reduce the excess mortality due to progressive disease by 50%. It costs $500.

Decision makers (e.g. clinicians) requested information on whether they should provide this end-of-life care in addition to the original treatment to reduce the disease progression.

Using the same health state transition model, conduct a cost-effectiveness analysis considering three strategies: 1) without treatment 2) with treatment but no end-of-life care, 3) with both treatment and end-of-life care

**Provide a table of cost and QALY of three strategies and report ICER.**

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Without treatment* | *With treatment* | *With treatment and end of life care* |
| **Total Costs** | $ 9,331,448 | $ 16,210,620 | $ 18,548,626 |
| **Total QALY** | 7,755.95 | 8,624.74 | 8,993.78 |
|  | | | |
| **Incremental Costs** |  | $ 6,879,172 | $ 9,217,178 |
| **Incremental QALY** |  | 868.79 | 1,237.83 |
| **ICER (compared to no treatment)** |  | $7,918.11/ QALY | $7,446.24/ QALY |

At a willingness to pay threshold of $20,000, compared to no treatment, the strategy that incorporates both treatment and end-of-life care seems to be more cost-effective at $7,446.24 per QALY gained, than a strategy based on treatment alone ($7,918.11/ QALY).