**Population Characteristics from Truven**

|  |  |  |
| --- | --- | --- |
| **Breakdown of overall MASLD patients (no diagnosis code for cirrhosis at MASLD diagnosis)** | | |
| Overall (N= 859970) | Male | Female |
| Age <50 | 187674 (21.8%) | 179391 (20.9%) |
| Age >=50 | 222642 (25.9%) | 270263 (31.4%) |
| **Breakdown of patients who were diagnosed with cirrhosis before HCC**  (These patients will be censored.) | | |
| Diagnosed cirrhosis (N=) | Male | Female |
| Age <50 | N (%) | N (%) |
| Age >=50 | N (%) | N (%) |
| **N(%) of patients with undiagnosed cirrhosis** (PLT<140 or FIB-4>=2.67 w/o cirrhosis diagnosis) | N(%) | |
| **Breakdown of patients who develop HCC (exclude pts who get diagnosed with cirrhosis before HCC)** | | |
| HCC (N=) | Male | Female |
| Age <50 | N (%) | N (%) |
| Age >=50 | N (%) | N (%) |
| **Breakdown of HCC patients who die (exclude pts who get diagnosed with cirrhosis before HCC)** | | |
| Death (N=) | Male | Female |
| Age <50 | N (%) | N (%) |
| Age >=50 | N (%) | N (%) |

**Please find the following in literature:**

**Annual incidence in MASLD patients:**

|  |  |  |
| --- | --- | --- |
|  | **Annual Incidence %** | **Reference from literature** |
| No cirrhosis to cirrhosis |  |  |
| No cirrhosis to HCC (any stage) |  |  |
| Compensated cirrhosis to HCC (we use this to account for undiagnosed cirrhosis cases) |  |  |
| Accidental diagnosis of HCC (in patients who are not screened) |  |  |
| HCC recurrence after curative treatment  (We will define as transplant, resection, and ablation for early stage HCC. Zane, World J Hepatol. 2022) |  |  |

**HCC stage upon diagnosis:**

|  |  |  |
| --- | --- | --- |
|  | **% Value** | **Reference from literature** |
| **Without HCC screening** | | |
| % Early stage |  |  |
| % Intermediate stage |  |  |
| % Late stage |  |  |
| **With HCC screening** | | |
| % Early stage |  |  |
| % Intermediate stage |  |  |
| % Late stage |  |  |

(\*We assume that the age and sex distribution will be uniform across the above HCC stages upon diagnosis)

**Annual rate of death in MASLD patients:**

|  |  |  |
| --- | --- | --- |
|  | **Annual Mortality %** | **Reference from literature** |
| No cirrhosis |  |  |
| Compensated cirrhosis (we use this to account for undiagnosed cirrhosis cases) |  |  |
| Early stage HCC |  |  |
| After Transplant |  |  |
| After resection |  |  |
| After TACE |  |  |
| After ablation |  |  |
| After systemic chemotherapy |  |  |
| After radiotherapy |  |  |
| Untreated |  |  |
| Intermediate stage HCC |  |  |
| After Transplant |  |  |
| After resection |  |  |
| After TACE |  |  |
| After ablation |  |  |
| After systemic chemotherapy |  |  |
| After radiotherapy |  |  |
| Untreated |  |  |
| Late stage HCC |  |  |
| ~~After Transplant~~ |  |  |
| ~~After resection~~ |  |  |
| After TACE |  |  |
| After ablation |  |  |
| After systemic chemotherapy |  |  |
| After radiotherapy |  |  |
| Untreated |  |  |

**Sensitivity/Specificity of HCC screening from literature**

|  |  |  |
| --- | --- | --- |
| **Probability** | **Value** | **Reference from literature** |
| Sensitivity of US/AFP |  |  |
| Specificity of US/AFP |  |  |

**Quality of life by health state from literature**

|  |  |  |
| --- | --- | --- |
| **Health State** | **Utility** | **Reference from literature** |
| No cirrhosis |  |  |
| False positive HCC |  |  |
| Early stage HCC |  |  |
| Intermediate stage HCC |  |  |
| Late stage HCC |  |  |
| Death | 0 | -- |

**Costs from literature**

|  |  |  |
| --- | --- | --- |
| **Cost** | **Value** | **Reference from literature** |
| US+AFP screening |  |  |
| Repeat CT/MRI for false positive HCC |  |  |
| Medical care of patients with non-cirrhotic MASLD |  |  |
| Liver transplant |  |  |
| Medical care of patients with HCC (excluding treatment) |  |  |
| Liver transplant |  |  |
| Resection |  |  |
| TACE |  |  |
| Ablation |  |  |
| Systemic chemotherapy |  |  |
| Radiotherapy |  |  |

Data we can use to double check our model

* 5/10 year incidence of cirrhosis in MASLD patients
* 5/10 year survival rate in MASLD-HCC patients

Question:

* How to account for patients who get treated for a period longer than a year
  + Need to find the average cost of this treatment as well