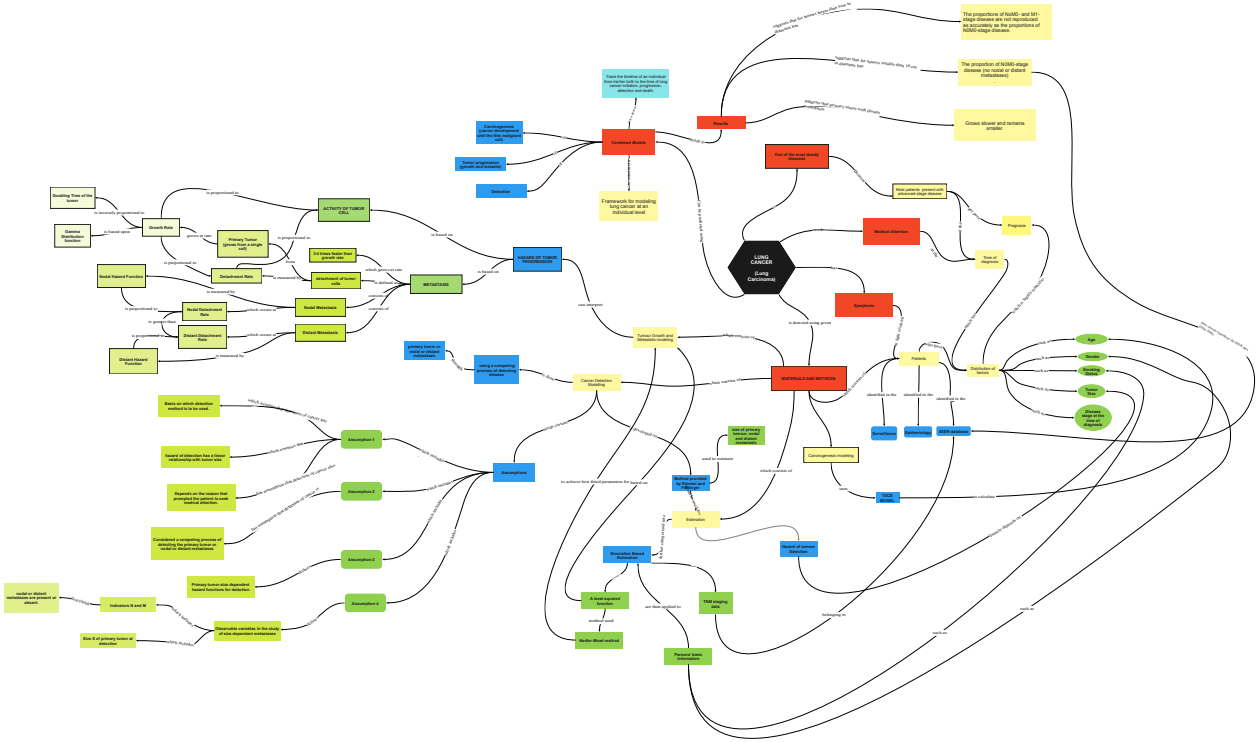
LUNG CANCER
(Lung Carcinoma)
Results
The proportions of NoM0- and M1-stage diseases are not reproduced as accurately as the proportions of N0M0-stage diseases.
The proportion of N0M0-stage disease (no nodal or distant metastases) ...
Grows slower and remains smaller.
Trace the timeline of an individual from his/her birth to the time of lung cancer diagnosis, treatment, detection and death.
Tumor Model
Carcinogenesis (normal development and malignant transformation of cells)
Tumor progression (growth and metastasis)
Detection
Framework for modeling lung cancer at an individual level
One of the most deadly diseases
Most patients present with advanced-stage disease
Medical Attention
Prognosis
Time of diagnosis
Symptoms
MATERIALS AND METHODS
Patients
Distribution of tables
Age
Gender
Smoking status
Tumor type
Primary site of the tumor of diagnosis
NationalDeaths
Epidemiology
SEER database
Carcinogenesis modeling
TNM staging data
Board of Tumor Detection
Estimation
Integration Based Estimator
A bond-squared function
Nodal-Metal method
Personal basic information
TNM staging data
Tumor Growth and Metastasis modeling
Cancer Detection Modeling
using a computing process of detecting disease
primary tumor or nodal or distant metastases
Assumptions
Assumption 1
Assumption 2
Assumption 3
Assumption 4
Basis on which detection method is to be used.
Award of detection has a linear relationship with tumor size
Depends on the reason that prompted the patient to seek medical attention.
Considered a computing process of detecting the primary tumor or nodal or distant metastases
Primary tumor size dependent hazard functions for detection
Observable variables in the study of size-dependent metastases
Indicators N and M
nodal or distant metastases are present or absent
Size S of primary tumor at detection
METASTASIS
Detachment of tumor cells
Nodal Metastasis
Distant Metastasis
Nodal Detachment Rate
Distant Detachment Rate
Nodal Hazard Function
Distant Hazard Function
ACTIVITY OF TUMOR CELL
Primary Tumor (grows from a single cell)
Detachment Rate
Growth Rate
Doubling Time of the tumor
Gamma Distribution function
SIZE OF TUMOR PROGRESSION
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