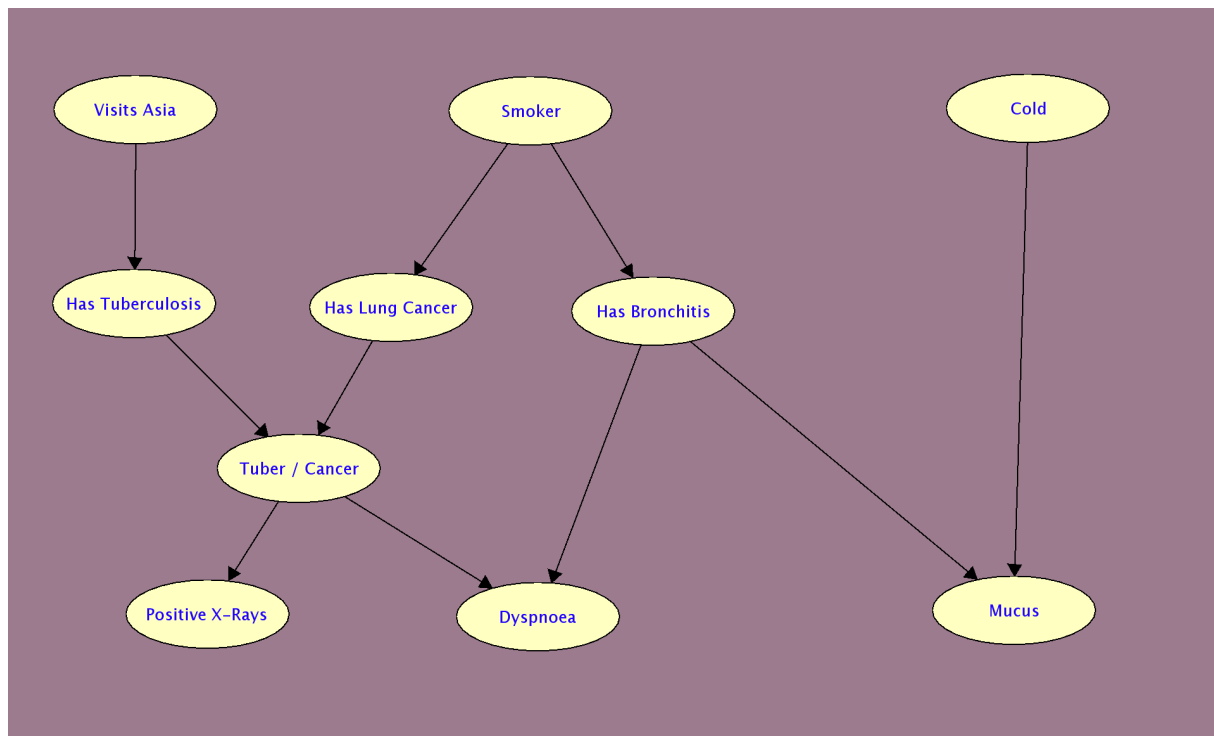


# BAYESIAN NETWORK FOR MEDICAL DIAGNOSIS

*Domain:*

Medical Diagnosis for Lung Cancer, Tuberculosis and Bronchitis



## Explanation to the Network

Whether the patient has visited the Asia, or smokes or has caught cold recently are the reasons for the diseases.

**Causes:**

*Visits Asia* interestingly increases the possibility of the patient having *Tuberculosis*. *Smoking* obviously increases the chance of *Having Lung Cancer* or *Having Bronchitis*. The diseases caused by catching *Cold* however are not displayed in this bayesian network. It only effects *Mucus*.

*Evidence variables: Visits Asia, Smoker, Cold*

### **Diseases:**

*Having Tuberculosis* and *Having Lung Cancer* effects the *Dyspnoea* and *Positive X-Rays* in the nearly same way. thus they will concatenated in another variable called *Tuber/Cancer* which effects having *Positive X-Rays* results and *Dyspnoea (breath shortness)*.

*Having Bronchitis* effects *Dyspnoea* and having *Mucus*.

*Query Variables: Has Lung Cancer, Has Tuberculosis, Has Bronchitis*

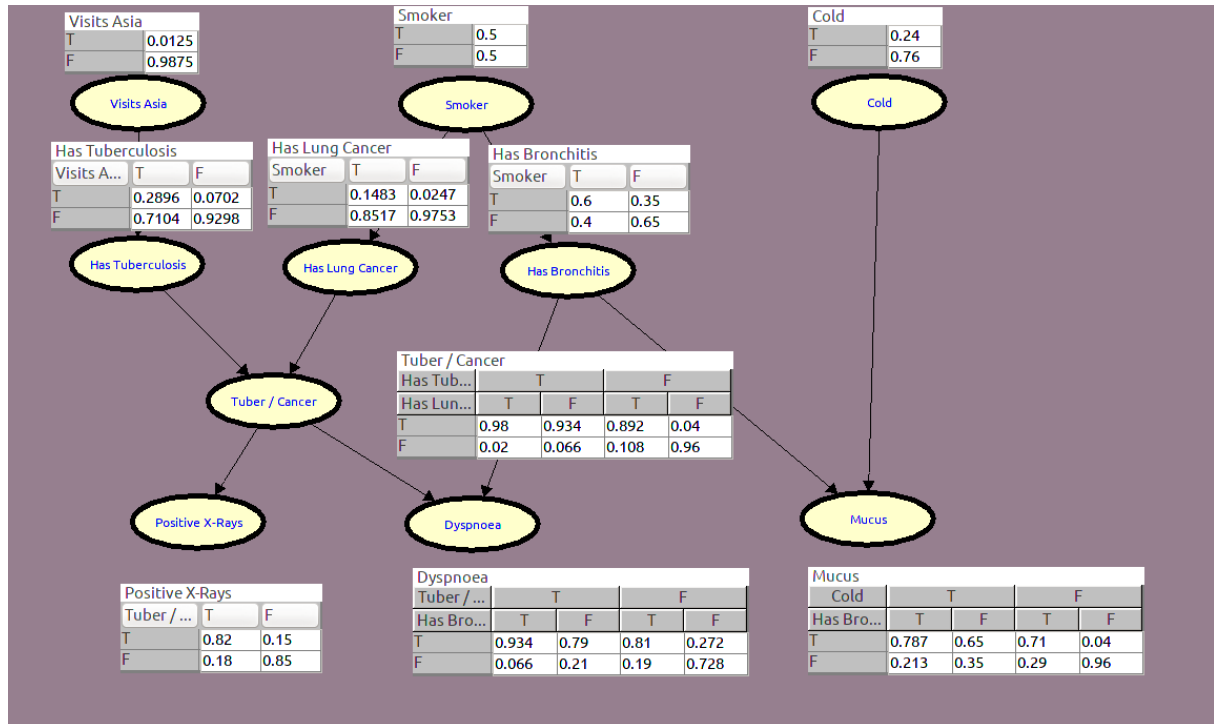
### **Evidences:**

These are the symptoms that we can observe in the real world via tests. They help us identify the Diseases.

*Evidence Variables: Mucus, Dyspnoea, Positive X-Rays*

*Neither Type Variable: Tuber/Cancer* (this can be included into query variables since it represents cancer and tuberculosis together in some way.

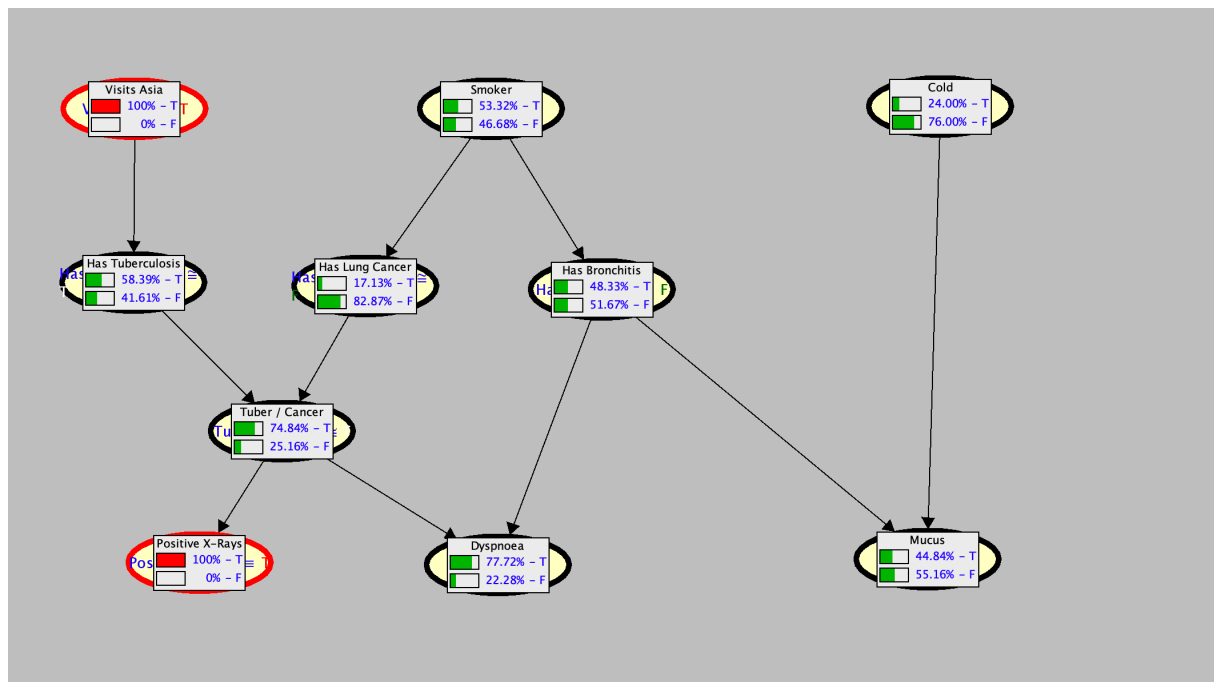
# CPT Tables



# Test Cases

## Case 1

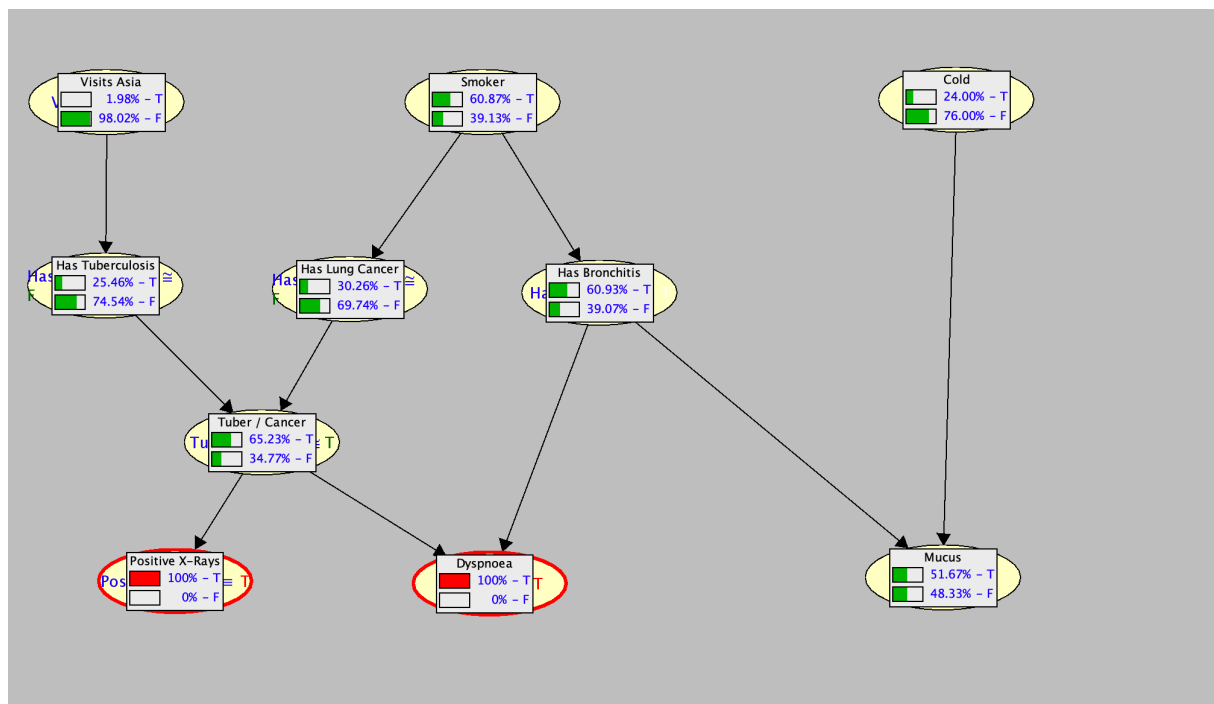
We have a patient that Visited Asia and has Positive X-Rays



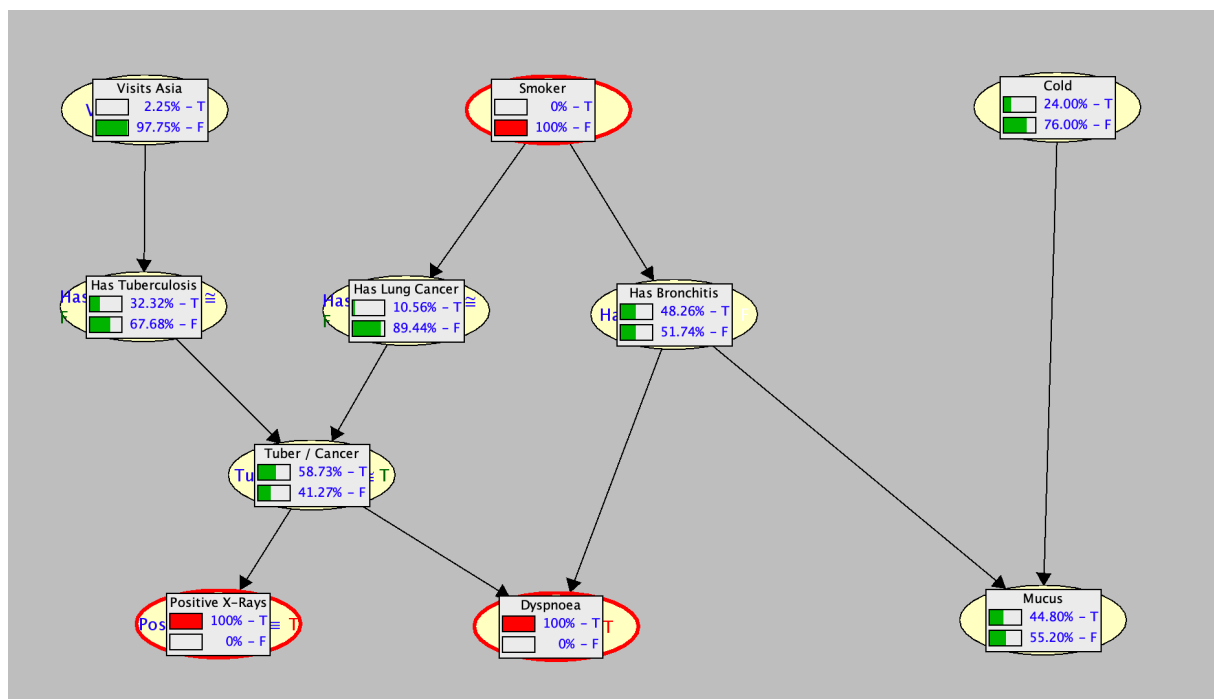
## Case 2

We have a patient that has Dyspnoea and Positive X-Rays results, and after we asked him we learn that he does not smoke, and he doesn't remember if he had visited Asia

1) After tests:



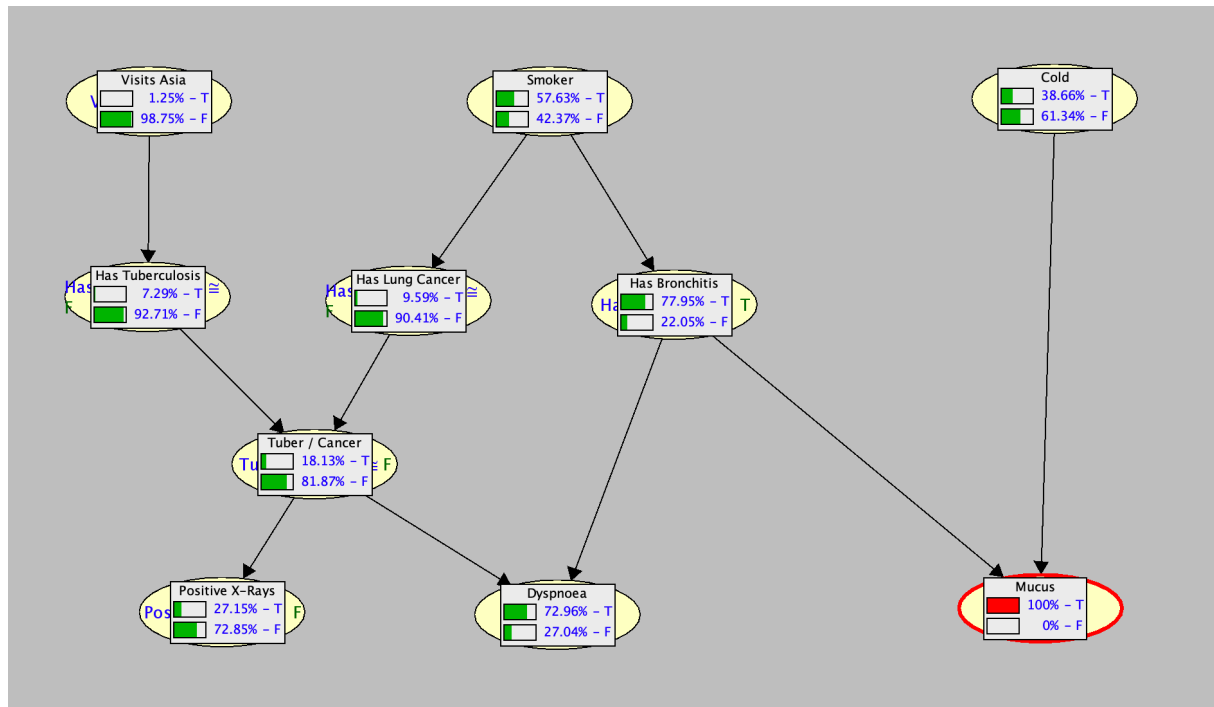
2) After he answers our questions:



### Case 3

We have a patient who has mucus, and when we ask her if she has Bronchitis, she said yes

1) *Mucus only:*



2) *After Bronchitis:*

