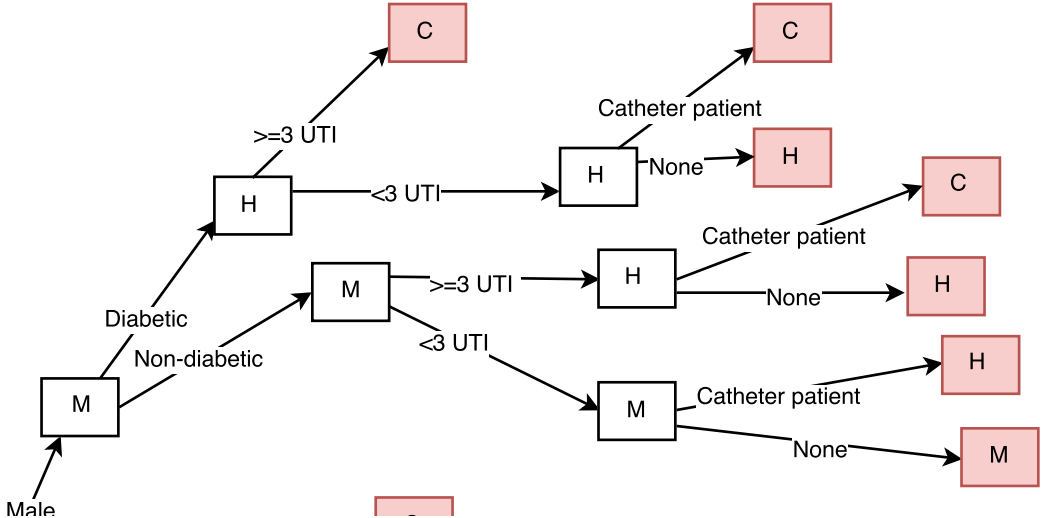
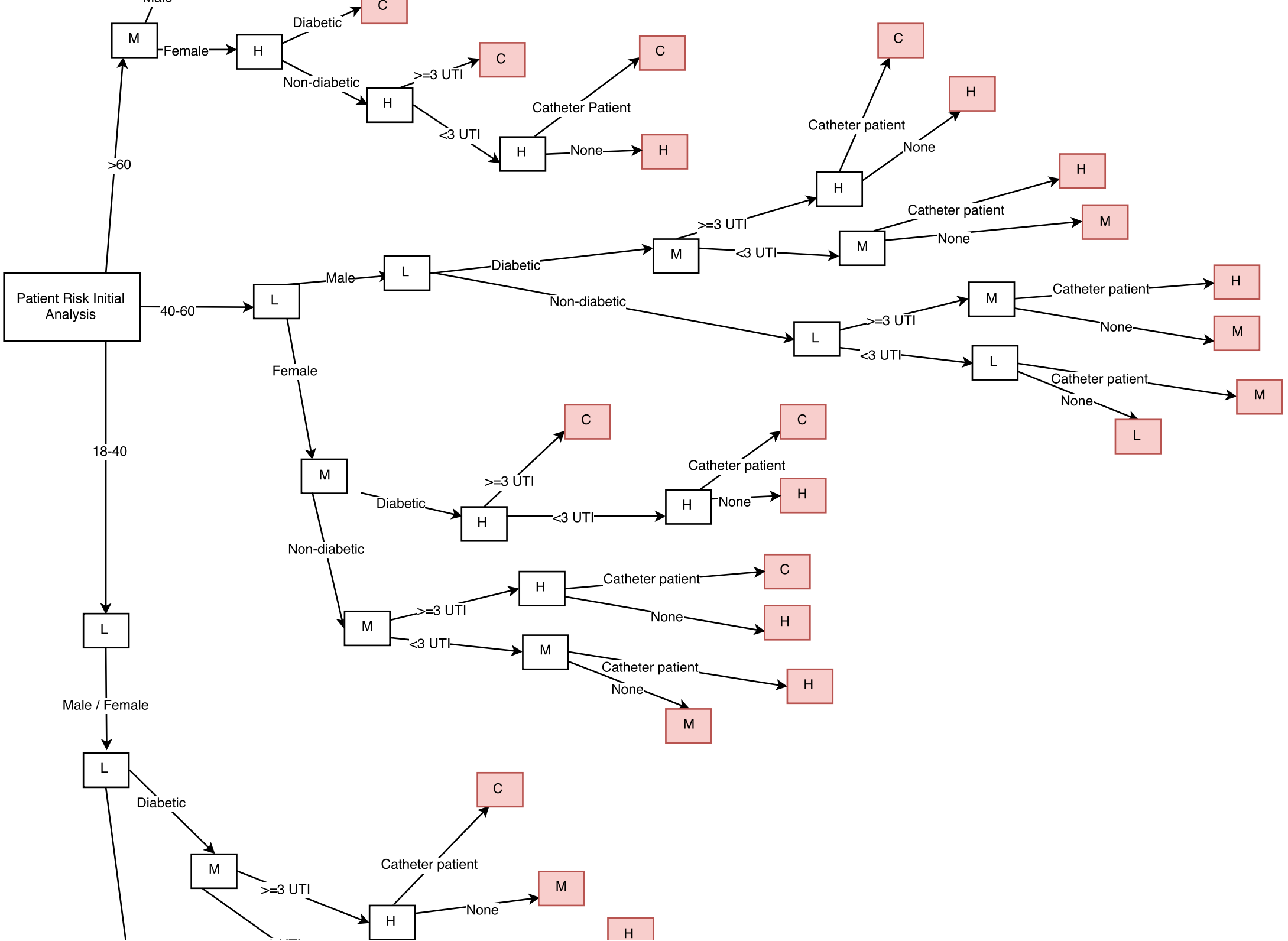
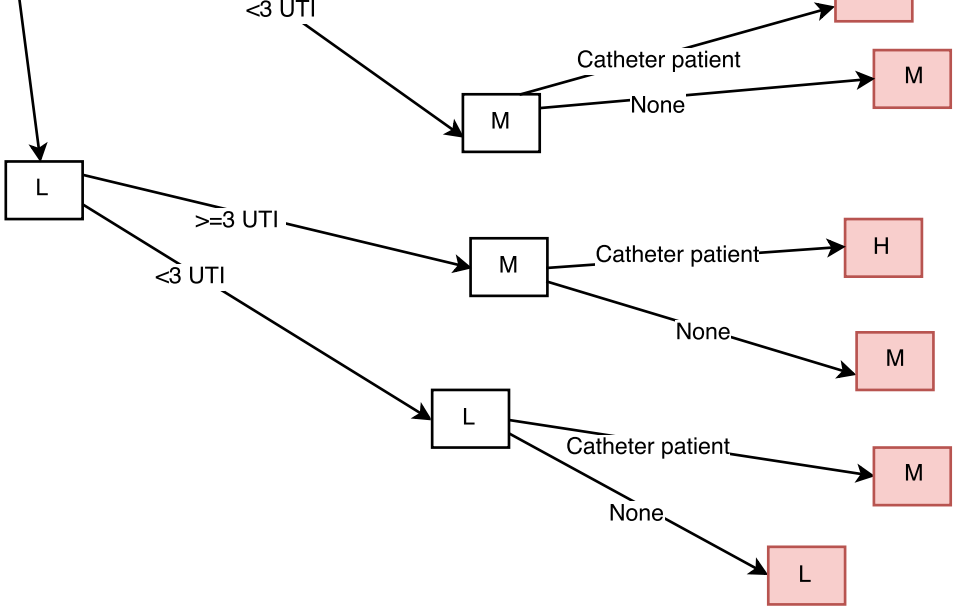

Male
M
Diabetic
Non-diabetic
H
>=3 UTI
C
<3 UTI
H
Catheter patient
C
None
H
M
>=3 UTI
H
Catheter patient
C
None
H
<3 UTI
M
Catheter patient
H
None
M


Patient Risk Initial Analysis
>60
40-60
18-40
Male / Female
M
Female
H
Diabetic
C
Non-diabetic
H
>=3 UTI
C
<3 UTI
H
Catheter Patient
C
None
H
L
Male
L
Diabetic
M
>=3 UTI
H
Catheter patient
C
None
H
<3 UTI
M
Catheter patient
H
None
M
Non-diabetic
L
>=3 UTI
M
Catheter patient
H
None
M
<3 UTI
L
Catheter patient
M
None
L
Female
M
Diabetic
>=3 UTI
C
<3 UTI
H
Catheter patient
C
None
H
Non-diabetic
M
>=3 UTI
H
Catheter patient
C
None
H
<3 UTI
M
Catheter patient
H
None
M
L
Diabetic
M
>=3 UTI
Catheter patient
C
None
M
H
<3 UTI
H
None
H


<3 UTI
Catheter patient
M
None
M
L
>=3 UTI
M
Catheter patient
H
<3 UTI
None
M
L
Catheter patient
M
None
L

Logic for Number of Notifications

Once the initial risk assessment has been carried out. We need to take into account the number of days since the patient had visited.

Status or Severity will be changed based on the number of days it has been since the patient last visited the hospital. The aim is to have more reminders for people in the more critical statuses as they are at a higher risk of getting infected and thus should be reminded more often of drinking water. As the number of days increase the patients should become more independent and form a habit of drinking water on a daily basis. So, for example if a patient's status is calculated to be critical but it has been around 180 days then the patient's new status would be medium. The number of days can be changed and they are based on our assumptions. We are following a linear model where each passing day decreases the susceptibility of the patient as the patient recovers from their ailment and the criticality decreases.

Initial Status	Number of Days	New Status
Critical	90	High
High	60	Medium
Medium	30	Low

The final calculations involve the number of notification that are going to be sent out to each of the user. It is going to take into account the number of steps from the google fit data. In calculation of the notifications we are assuming that the number of notifications should change based on the exercise done by each individual. Here we are assuming that a person who is exercising or has greater than 3000 steps logged in their fit bit has higher need for water and thus need to be reminded of drinking water more frequently than others.

Status	Number of Steps	Number of notifications
Critical	-	8
High	> 3000	8
High	< 3000	6
Medium	> 3000	6
Medium	< 3000	4
Low	> 3000	4

Low	< 3000	2

Logic for Callback Criticality

We are allowing the patient to request for a call back from the nurse. Before the patient sends the request he is supposed to fill out a form which will primarily be used by the server to provide the patient criticality to the nurse. Since UTI isn't a life threatening situation we can allow a little time for the nurse to reply back. The form will feed into the server which in turn will calculate the severity of the symptoms. If the patient is suffering from most or all of the symptoms of a UTI he/she needs the attention of the nurse since the chances of hospitalization are really high. For patients with less symptoms, it will allow the nurse to diagnose the UTI well in advance and provide medication and advise proper healthcare to the patient and reduce the hospital readmission rate.
The following are symptoms of UTI which are being taken into account while calculating the severity of the patient.

Symptom	Option
Pain	Yes/No
Nausea	Yes/No
Fever	Yes/No
Fatigue	Yes/No
Color of the Urine (cloudy/ dark/ normal)	cloudy/ dark/ normal

Like the logic for the number of notifications we have different categories for the patient criticality namely, 'Needs Immediate Attention', 'Medium Priority Patient' and 'Low Priority Patient'. Again, the symptoms listed do not extensively cover all the symptoms that are exhibited when a patient suffers from a UTI but some of it.
We have a simple logic for determining the callback criticality that is given below:

Criticality	Number of Symptoms exhibited by Patient
Needs Immediate Attention	>=3
Medium Priority Patient	>=2 and <3

Low Priority Patient	>0 and <2

Source:

1. Harding, Mary. “Urinary Tract Infection in Adults.” *Urinary Tract Infection Symptoms and Treatment, Bladder Infection Symptoms | Patient*, Patient.info, 24 Mar. 2016, patient.info/doctor/Urinary-Tract-Infection-in-Adults.
2. Henry Ford Health System. “Women Suffer Most from Urinary Tract Infections, Men More Likely to Be Hospitalized.” *ScienceDaily*, ScienceDaily, 8 Oct. 2013, www.sciencedaily.com/releases/2013/10/131008142203.htm.
3. Clear, James. “The 3 R's of Habit Change: How To Start New Habits That Actually Stick.” *James Clear*, 2 Oct. 2017, jamesclear.com/three-steps-habit-change.
4. “Urinary Tract Infection (UTI).” *Mayo Clinic*, Mayo Foundation for Medical Education and Research, 25 Aug. 2017, www.mayoclinic.org/diseases-conditions/urinary-tract-infection/symptoms-causes/syc-20353447.