

# What is the rate of co-morbidity in the population?

Calculate the percentage of unique HCA with more than one chronic condition of interest. Use the HCAs with at least one chronic condition as the denominator.

In [2]:

```
import pandas as pd
import numpy as np
```

In [4]:

```
med = pd.read_csv('../data/reshaped_med.csv')
enroll =
```

Out[4]:

	member_id	year	age	gender	postal_code	county	urban_rural	bin
0	710087KT90EY0DZUV	2018	47	F	98335	PIERCE	urban	1
1	71008ADZ2VBBDM14C	2016	54	F	98032	KING	urban	0
2	7100UNBYH5SYEX19X	2016	63	F	98926	KITTITAS	rural	0
3	7100UNBYH5SYEX19X	2018	65	F	98926	KITTITAS	rural	0
4	71069K607Y1CQ9BV5	2016	70	M	98059	KING	urban	0

5 rows x 9 columns

## Group by Member ID

In [4]:

```
# Group by member id
member_groups = data.groupby(['member_id'])
comorbid = 0
at_least_one_condition = 0

# Loop through groups to count members
for mg_id, mg in member_groups:
    if any(mg['flag_comorbidity'] == 1):
        comorbid += 1
    if any(mg['total_conditions'] >= 1):
        at_least_one_condition += 1
```

In [5]:

```
# Calculate comorbidity rate:  
# # of HCAs with more than one chronic condition/# of HCAs with at least one con  
dition  
comorbidity_rate = comorbid/at_least_one_condition
```

In [9]:

```
print('Number of members with multiple chronic diseases: ', comorbid)  
print('Number of members without at least one chronic diseases: ', at_least_one_  
condition)
```

```
Number of members with multiple chronic diseases:  3109  
Number of members without at least one chronic diseases:  5921
```

In [10]:

```
print('Commorbidity rate: ', comorbidity_rate)
```

```
Commorbidity rate:  0.525080222935315
```