

Let us see what we learn about the patterns that emerge.

We will show that the clusters are interpretable and reveal unique patterns of diagnostic history among the population.

We selected six patterns to present in this lecture-- Cluster 1, 6, and 7, in Cost Bucket 2, and Clusters 4, 5, and 10, in Cost Bucket 3.

The first pattern shows the occurrence of chest pain three months before the heart attack.

Note that the red dots depict the visits per diagnosis for patients in Cluster 1-- this is, we think, Bucket 2-- and the blue dots depict the visits per diagnosis for patients in Bucket 2 throughout.

Note the very significant increase for visits related to chest pains three months before the event.

About 17, three months before for the red patients, and about 1 and 1/2 visits for the blue patients.

The next pattern reveals an increasing occurrence of chronic obstructive pulmonary disease, COPD, for short.

Patients from Cluster 7 in Bucket 2 have regular doctor visits for COPD.

Note that nine months before, we have 4 and 1/2 visits versus 0.5 visits.

Six months before, we have almost 7 visits versus 1/2 a visit, and three months before, we have 9 visits versus 1/2 a visit for COPD, so a clear increasing pattern.

The next pattern shows gradually increasing occurrence of anemia.

The red line shows the patient's in Cluster 4 increasingly visit the doctor for anemia from nine months on before the event.

Nine months before, members have an average of 9 visits to the doctor for anemia.

This increases to an average of 11 visits six months before the event, and then an average of 15 visits three months before the event, a clear increasing pattern.

The final pattern shows the occurrence of diabetes as a pattern for heart attacks.

It is well known that both types 1 and 2 diabetes are associated with accelerated atherosclerosis, one of the main causes of myocardial infarction-- heart attacks, that is.

Well known diagnoses associated with heart attacks, such as diabetes, hypertension, and hyperlipidemia, characterize many of the patterns of the consistency of care throughout all of the cost buckets and clustering models.

You observe a difference, here, of the number of visits for diabetes for the population that had the event versus the other population.